rabbits, and cats, and a comparative protozoacidal evaluation on amebae *in vitro* as well as on natural balantidial infestations in guinea pigs and on natural monkey amebiasis indicates that 4-carbamino-phenyl-arsonic acid ("carbarsone") has definite advantages from the standpoint of application to anti-amebic therapy over acetarsone ("stovarsol"), tryparsamide, "proparsamide," "iso-butarsamide," and "n-butarsamide." It is definitely less toxic on oral administration than these compounds and seems generally more protozoacidal in tolerated doses.

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Effects of Ovaries in Various Stages of Activity and of Pregnancy Upon Adrenalectomized Rats.

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According to Stewart and Rogoff,[1] the survival period of adrenalectomized dogs is prolonged by pregnancy. H. A. Stewart[2] finds this same mechanism exists in the cat, although E. Z. Corey[3] concludes that the presence of corpora lutea have not this influence in the pregnant and lactating female. Mulon and Vincent[4] suggest that the corpus luteum acts as a temporary adrenal cortical body, thus accounting for the increased survival period which does occur apparently in dogs. Herring[5] on the other hand, points out that the rat liver is 27.5% heavier in the pregnant rat due to glycogen storage, and that this storage accounts for the extended survival period. Harding[6] adds that protein economy in pregnancy may extend this period.

In the white rat, fresh corpora lutea are constant in the ovary and exist in 3 forms, those of ovulation, pregnancy, and lactation. According to Evans, each of these may have certain characteristics and these may be distinguished both grossly and microscopically. The following experiments are the results of an effort to determine

[1] Stewart and Rogoff, *Am. J. Physiol.*, 1927, **79**, 508.

[2] Stewart, H. A., reported by MacCallum, *Int. Cong. Med.*, London, Sec. 3, 173.

[3] Corey, E. Z., *Phys. Zool.*, 1928, **1**, 147.

[4] Vincent, S., cited by Britton, "Internal Secretion of the Ductless Glands," (Monograph), London.

[5] Herring, P. T., *Brit. Med. J.*, 1920, **2**, 886.

[6] Harding, V. J., *Physiol. Rev.*, 1925, **5**, 279.

the influence of these corpora lutea upon the post-operative survival period of bilateral adrenalectomized white rats.

I. *The influence of ovariectomy.* Eighteen 250 gm. female white rats, each experiencing a normal oestrus cycle, were selected. Six of these were kept under uniform conditions as controls. In the remaining 12, both adrenals were removed and in 6, both ovaries were removed as well. Ether anesthesia was used and all 18 of the animals were subjected to the same period of inhalation. The entire group was kept in an isothermic chamber at 37° and were fed the normal laboratory diet. The animals were observed and their daily weight, temperature, and oestrus cycle recorded.

Group I. Control. Of this group, all the animals either kept their weight within normal fluctuations or gained. They maintained a normal body temperature and sexual rhythm, and their alimentation was normal for the period.

Group II. Bilateral Adrenalectomy. Oestrus was immediately interrupted. The animals lost an average of 5 gm. per day, and the temperature declined from an average of 38.1°C. the day of operation to 35.6°C. the fifth day post-operative. They became asthenic on the fourth day after operation. No diarrhea was observed. One animal died the fifth day, and 4 on the sixth day after surgery, all from adrenal insufficiency. The sixth animal was still living and healthy 22 days later, and autopsy at that time showed a right adrenal remnant left at operation which had doubtless been the factor in survival. The average survival period for the group, eliminating this last member, was 6.4 days.

Group III. Bilateral Adrenalectomy and Oophorectomy. This group lost weight at about the same rate as Group II, 5 gm. per animal per day. The average temperature decreased from 37.3°C. the day of operation to 34.1°C. the seventh day post-operative. The oestrus cycles stopped immediately following operation. Asthenia was noticeable the fourth day, and increased until death. One animal died on the third day with a lung abscess. One died the sixth day. 3 died the eighth day, and one died the eighteenth day after operation, all from adrenal insufficiency. The eighteen-day period must have been supported by an adrenal remnant left at operation, although it could not be found at autopsy. Eliminating these 2 extreme cases, the average survival period for this group was 7.5 days.

Conclusion. Oophorectomy and the absence of the corpora lutea of ovulation does not shorten the survival period of bilateral adrenalectomized white rats.

II. Effect of the presence of the corpus luteum of lactation.

Of 7 females in this group, 2 were operated upon the day before delivery, one 7 days, one 8 days, one 10 days, one 14 days, and one 16 days post partum. Except in the first two, lactation was well established and adequate. Exploration of the ovaries at the time of operation showed the presence of many large, firm lutein bodies in each ovary. In the first 2 individuals, the breasts were never well filled with milk and the young remained weak until death. In the others, active lactating organs declined and were dry from the second to the fourth day.

The young, normal and active until operation upon the mother, were moribund between the second and fifth days, post-operative, and died from the third to the sixth day after maternal adrenalectomy, the average post-operative survival period of the young being 3.8 days. The mothers passed through the usual stages of decline due to adrenal insufficiency, with weight loss, lowering of body temperature, asthenia, and death, which occurred on the fourth day after operation in 2, the fifth day in one, the seventh in 3, and the ninth in one, with an average of 6.0 days for the series.

Three lactating females, etherized only, showed no alteration in health or milk supply.

Conclusion. The presence of the corpus luteum of lactation does not prolong the life of bilateral adrenalectomized white rats.

III. Effect of pregnancy. Of the 7 animals in this group, one was in the seventh day of gestation, one in the thirteenth, 2 in the fifteenth, one in the sixteenth, one in the seventeenth, and one in the eighteenth day of gestation. Bilateral adrenalectomy was done under the standard conditions outlined. A group of 3 pregnant females were etherized only. No significant changes were noted in these and they went on to normal term delivery.

The 7 animals operated upon showed the usual signs of adrenal insufficiency on the fourth day, with loss of weight and body temperature, asthenia, and death. Three animals died with the young stuck in the birth canal on the third, sixth, and eighth days respectively; a fourth died on the sixth day after aborting, and three died on the fourth, seventh, and tenth days, respectively, with the young apparently viable in the uterus. Autopsy showed a coincident pneumonia in the animal dying on the seventh day. Other autopsy findings in the maternal and foetal tissues will be reported later. The average survival period for this group was 6.3 days.

Conclusion. Pregnancy in the white rat does not prolong the survival period after bilateral adrenalectomy.