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Termination of Early Pregnancy by Artificial Fever.*

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Artificial fever is generally regarded as a safe form of therapy even in late pregnancy,[1] but the relatively delicate and rapidly developing blastocyst at about the time of implantation seems to offer the prospect of a low thermal death point with safety to the maternal gonads and tissues.[1] Pincus and Enzmann[2] found that rabbit eggs *in vitro* could be induced to form polar bodies by 3-min exposures at 45.5°C. These were parthenogenetic activations and the subsequent history of the eggs was not recorded.

A simple method of fever treatment for rabbits was described by Schamberg and Rule,[3] who exposed the animals for 20 min at 45°C (113°F) and brought the body temperature up to 110°F.

To determine whether otherwise harmless periods of induced fever can terminate pregnancy in the rabbit, 20 mature does were mated and each doe was given fever treatment by the method of Schamberg and Rule, 72 to 80 hr after the observed mating or matings. Most of the matings were made to 2 or 3 bucks successively. The 20 matings represent 14 different does, some having been used more than once. The animals were first placed in a bath made from a 50-gallon metal barrel with a false floor of strong wire netting, and water at 100°F was run in until they could just keep their noses above the water line while standing on the netting. During the next 10 min hot water was added to bring the temperature of the whole bath to 113°F, but the water level was kept constant by a side outlet. The rectal temperature was raised to 108-109°F, an increase of 6-7°F. Twenty min at the fever producing level was followed by a 5-min period during which cold water was added to bring the bath temperature back to 100°F. The rabbits were then removed and dried. In addition, 4 does were carried through the same process except that the water was kept at 100°F. All 4 of these bore litters, as expected.

The 20 fever-treated does included one which was removed from the bath on account of severe prostration at the end of 10 min at 113°F, and one which never was brought above 107°F (due to failure to apply a correction factor to the thermometer reading.) Both of these did bear litters and both litters were apparently normal, although born late on the 32nd and 33rd days, respectively, instead of on the usual 30th day. The records of these 2 animals suggest that 10 min at 113°F or 20 min at 107°F will not kill the 3-day blastocyst.

Of the remaining 18 matings, 17 produced no litters while one (the last) produced 5 normal young. This doe was treated simultaneously with a litter sister, which did not bear young, so that a higher degree of individual resistance appears to be indicated. It should be noted that this "exceptional" doe was the largest and heaviest of the animals used. Ten of the 14 experimental animals were subsequently mated and of these 8 produced normal litters, so that they must be assumed to have been of normal fertility and to have suffered no permanent damage from the fever treatment.

It appears that otherwise harmless periods of artificial fever are capable of terminating early pregnancy in the rabbit.

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1 Neymann, Clarence A., *Artificial Fever*, Baltimore, 1938.

2 Pincus, Gregory, and Enzmann, Ernst V., *J. Exp. Zool.*, 1936, **73**, 195.

3 Schamberg, Jay F., and Rule, Anna, *Arch. Derm. and Syph.*, 1926, **14**, 243.