ment of a primary lesion plus an effect which appeared to be attributable to the early removal of even the small bit of syphilitic tissue used in the process of inoculation by the implantation of a small piece of infected testicle beneath the skin of the right scrotum. 48 hours later, the entire scrotum and testicle were amputated under ether anesthesia. By the end of the 7th week, 8 of the 10 rabbits had developed marked generalized syphilis while the other 2 showed a definite lymphadenitis. One of these developed slight generalized lesions at the end of 2 months and the other 2½ months after inoculation. As a whole, however, the generalized infection was the most pronounced which we have seen in any single group of animals.

Conclusions.—The conclusions to be drawn from these experiments are: That the marked character of the reaction which takes place in the rabbit following local inoculation of old strains of *Treponema pallidum* is in a large measure responsible for the absence of generalized lesions; that an inhibitory influence is exerted upon the development of other lesions which is proportionate to the reaction taking place at the site of inoculation and that the reduction, suppression or prevention of this reaction will remove this influence to a sufficient extent to permit the development of a generalized disease analogous to that which occurs in man.

90 (1550)

Blood changes in ether anesthesia.

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During light ether anesthesia the bicarbonate content of the arterial blood falls, the carbon dioxide tension (determined directly by the tonometric method on the blood) rises, as does the hydrogen ion concentration. These phenomena indicate a state of uncompensated acidosis. The oxygen saturation increases, indicating that ventilation is accelerated in response to the stimulus

of increased carbon dioxide tension. The acceleration does not, however, as under normal conditions, reach the height necessary to keep CO_2 tension and hydrogen ion concentration down to normal limits. It therefore appears that even in light etherization the respiratory center is markedly deadened.

In deep etherization the carbon dioxide tension rises still higher (over 80 mm. has been observed) and the P_H may fall to below 7.2. Respiration not only fails to be accelerated in response to the increased CO_2 tension but may even be so retarded that the oxygen saturation of the arterial blood falls below that normally found in venous. The blood tends to become concentrated.

Conductivity and chloride determinations on the serum indicate only minute changes. The only striking electrolyte changes appear to be the increase in hydrogen ions and the replacement of part of the bicarbonate HCO_3 anions by the anions of acids as yet unidentified.