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Observations on the Transmission of Anaphylactic Sensitivity in the Guinea Pig.

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Ratner, Jackson and Gruehl,[1] in an exhaustive study of passive sensitization *in utero,* showed conclusively that when a female guinea pig was actively sensitized, and was bred with a normal male, all the offspring would be born sensitive as long as the mother remained sensitive. They used horse serum and demonstrated the presence of sensitivity by either the intravenous or intraperitoneal injection of the antigen or by means of the Schultz-Dale reaction. Passive sensitivity induced in this manner according to these authors "definitely persists for about 2½ months and may occasionally persist, to a moderate degree, up to 4 months. It will have worn off before the sensitized offspring matures and is capable of conception."

We have used the method referred to above to produce guinea pigs sensitive at birth to egg white. Chart 1 shows the details of our observations on the placental transmission of egg sensitivity from actively sensitized guinea pigs to their offspring and from these passively sensitized guinea pigs to over one-half of their litters. Instead of persisting for only 2½ months, as in Ratner, Jackson and Gruehl's series the passive sensitivity in our animals lasted long enough so that 4 females bred at 6 months of age had litters in which half could be demonstrated to be sensitive. All 4 mothers were tested after the birth of the offspring and none of these 4 suffered an anaphylactic shock. Similarly 4 passively sensitized females bred at 3 months of age produced 15 offspring, nine of which were born sensitive. All 4 mothers were tested after the birth of the offspring and each of these 4 animals suffered a definite anaphylactic shock with recovery when 181, 191, 193, and 203 days old.

These experiments demonstrated that passive anaphylactic sensitivity to egg white transmitted to a guinea pig *in utero,* lasts long enough to be transmitted through her placenta to at least half of her offspring if she is bred before 6 months of age.

[1] Ratner, Bret, Jackson, Holmes C., and Gruehl, Helen Lee, *J. Immunol.,* 1927, **14**, 291.

TABLE I.

23 F. Egg white 0.01cc. intraperitoneal April, 1935.
Egg white 0.10cc. intraperitoneal May, 1935.
Severe shock in all; all recovered.