SUMMARY.

In this series an increase in the euglobulin fraction appears to run parallel with a positive Wassermann reaction and vice versa. But what the exact normal limits of the euglobulin content are cannot be determined with certainty from this small series of cases. Not until results from a much larger number of cases are obtained can any positive statement be made. We can only claim that the findings are most suggestive. We are continuing the work along these lines on blood as well as on spinal fluids.

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The blastophthoric effect of chronic lead poisoning: Breeding experiments. Preliminary report.

By CARL VERNON WELLER, A.B., M.D. (*by invitation.*)

[*From the Department of Pathology, University of Michigan.*]

There have been frequent clinical observations of the apparent deleterious effect upon the germ plasm exerted by chronic lead poisoning. A majority of these cases have been found in female lead workers and in these it might be supposed that abortions, stillbirths and early deaths of infants were due as much to the toxic effect of lead during intra-uterine development as to an actual injury to the germ plasm. In the smaller number of instances in which the male parent alone was poisoned, the resulting sterility without impotency, the stillbirths and the early deaths of offspring are difficult to explain unless they are due to blastophthoria. The work of Stockard and of Cole and Davis has shown that alcohol has a similar effect. In a recent report which appeared as the present series of experiments was being concluded Cole and Bachhuber have demonstrated that the offspring of male rabbits poisoned by lead as well as of male fowls similarly poisoned are of distinctly lower vitality than the offspring of normal males.

In attempting to determine experimentally whether blastophthoria occurs in chronic lead poisoning, guinea pigs were given repeated weighed doses of commercial white lead in capsules by

mouth. These guinea-pigs were mated, lead females with normal males and lead males with normal females. In order to check the results as efficiently as possible control matings were made of normal males with normal females under the same feeding and housing conditions as the lead poisoned pigs, and for the same reason the normal females were bred alternately to lead males and to normal males. The dosage of lead was controlled by frequent weighings in order that the general nutrition should not be seriously impaired.

A total of 93 matings yielded 170 offspring. Of these, 32 matings of normal male with normal female produced 58 offspring with an average birthweight of 81.5 gms. From 34 matings of lead male with normal female 65 young were produced with an average birthweight of but 66.3 gm. From 27 matings of normal male and lead female, 47 young were produced with an average birthweight of 69.3 gm. Nine offspring of lead males died in the first week against two offspring of normal males dying in that time. Eight young of lead females were stillborn against three stillborn from normal females bred to normal males.

From the entire series of matings the following conclusions seem to be justified:

1. In chronic lead poisoning in guinea pigs there is a definite blastophthoric effect which can best be demonstrated upon the male germ plasm. This effect manifests itself in some instances by sterility without loss of sexual activity, by a reduction of 20 per cent. in the average birthweight, by an increased number of deaths in the first week of life and by a retardation in development such that these pigs remain permanently underweight.

2. From the apparent recovery of the germ plasm some time after stopping the administration of lead it seems that the deleterious effect must be suffered especially by that portion of the germ plasm which is undergoing maturation and not by that which is stored in the primary germinal epithelium. However, final judgment upon this point must be withheld.