

term, seven lived for a few days after birth and all died in convulsions, four were *in utero* when the mothers were killed and one of these was deformed.

All of the control matings were successful, all of the young lived and were vigorous.

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### Growth and maintenance on purely artificial diets.

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In earlier reports of the authors' feeding experiments with isolated food substances<sup>1</sup> attention was directed to the failure to induce growth or secure prolonged maintenance of body weight in albino rats with any of the food mixtures tried prior to the introduction of "protein-free milk" as the adjuvant of the dietary which furnished the inorganic nutrients together with some of the carbohydrate (in the form of lactose). In order to determine whether the nutritive success achieved by the use of the protein-free milk was due to the peculiar supply of inorganic salts or some other ingredient, an artificial mixture of salts was prepared to imitate as nearly as possible the proportions of acid and basic radicals in the milk product. This mixture, the preparation of which will be described in detail in a forthcoming paper, contains: Ca 1.97; Mg 0.23; Na 2.03; K 2.66; PO<sub>4</sub> 3.33; Cl 4.13; SO<sub>2</sub> 0.30; Fe 0.04; citric acid 3.33; lactose 82.0 per cent. This purely artificial product added to purified proteins, starch, sugar and lard has already sufficed to meet the needs of rats for maintenance over very considerable periods of time, and has, thus far, proved as efficient in promoting early growth as the so-called protein-free milk used in our former experiments.

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<sup>1</sup> Osborne, T. B., and L. B. Mendel, Carnegie Institution of Washington, Publication 156, Part II, 1911; and *Science*, 1911, XXXIV, p. 722.