plated; the solutions of high concentration, 64.4, 82.8, 100 per cent. were placed in a shaking machine and shaken for 5 minutes. Uniform distribution of the organisms was thus obtained even in the concentrated solutions.

The average results of 23 different series of tests are shown for typical time intervals in the table above. They suggest the following conclusions.

1. Glycerol in 9 per cent. solution exerts no appreciable effect upon the viability of *B. coli.*

2. Glycerol in solutions of strengths between 28 per cent. and 100 per cent. exerts a distinct disinfectant action, the effect increasing progressively with increase in the concentration, a 100 per cent. solution of glycerol causing the destruction of nine tenths of the bacteria present in three hours.

53 (1428)

The effects of intravenous injections of dichlorethylsulphide in rabbits.

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The effect of intravenous injections of dichlorethylsulphide (mustard gas) was studied in a small series of rabbits. The minimum lethal dose was found to be from 0.005 gm. to 0.01 gm. per kilo. The injection was followed by emaciation, diarrhea, and, in animals dying within a few hours following the injection, extreme restlessness, incoördinate movements, retraction of the head, and transient spasticity, but no definite paralyses or convulsions. Animals dying within twenty-four hours or so showed irregular pulmonary edema. The most interesting effects were found in the hemato-poietic system. Usually on the second day after the injection, the circulating blood showed a marked leukopenia, which in the terminal stages became extreme, leukocytes falling to 1,000 per cubic mm. or less. In animals which recovered there followed a gradual restoration to the original level. The leukopenia was accompanied by a relative but not absolute, mononucleosis. The erythrocytes appeared to be less severely injured.

A study of the bone marrow in these animals shows an effect comparable to that of benzol. There is early destruction of the cells of the granulocyte series and in some animals an extraordinary depletion of the bone marrow. Animals which partially recovered from the initial injection and were then killed, showed active regenerative changes in the bone marrow.

There is a possibility that these effects may have been due to the chlor-benzine or nitro-benzine used as a solvent in German gas shells, and carried over in the distillate used for injection. In view of the small amount of such impurity present, this does not seem likely, but there was no opportunity to repeat the experiments with dichlorethylsulphide completely freed from this solvent.

The experiments were carried out in collaboration with Capt. Morgan B. Vance, M.C., at Hanlon Field, Chaumont, France.

54 (1429)

Developmental rate and the formation of embryonic structures.

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The eggs of different species develop at specifically characteristic rates. These rates vary for a given species within certain limits. Variation in the direction of increased rate is far more limited and more difficult to bring about experimentally than is the opposite variation towards a decreased or slower rate.

The slight acceleration of developmental rate that may be induced in early embryos does not seem to cause any marked deviation from the normal course of development, on the contrary such embryos are unusually well developed. It might be said that the ideal rate of development is probably somewhat faster than the so-called normal average usually followed. In other words, the normal conditions of development are not entirely the best possible conditions.

The limits of retardation in developmental rates are extremely wide. The rate may be slowed down to almost zero or development may actually be to all appearances stopped for long or short