in antistaphylococcus and anticoli bacteriophages incubated for one month at 37.5°C. are reported in Table I, the activity of the 'phage suspension being determined by periodic titration during this period. No secondary cultures developed in any of the chemically treated suspensions while secondary cultures developed in several of the filtered 'phage controls.

These results indicate that merthiolate can be added in a concentration of 1-100,000, metaphen 1-100,000, or potassium mercuric iodide 1-10,000 to suspensions of 'phages active against *Esch. coli* or *Staph. aureus* without reducing the titer of the 'phage on standing and at the same time preventing the development of secondary cultures.

At 37.5°C. the results reported here with merthiolate do not agree with those reported by Jamieson and Powell for tests carried out at a lower temperature. Results given in Table I show that the activity of the various bacteriophages tested was slowly reduced by merthiolate in a concentration of 1-10,000. Jamieson and Powell reported that merthiolate in a dilution of 1-5,000 did not markedly affect the 'phage in one year at room or ice box temperature. In these tests at 37.5°C. merthiolate in a concentration of 1-1,000 completely inactivated an antistaphylococcus bacteriophage in less than 2 weeks.

By the use of such preservatives it should, therefore, be possible for the physician located at a distance from the bacteriophage supply laboratory to maintain an efficient supply of various polyvalent 'phages available for use in emergency or routine therapeutic use of bacteriophage.

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A Method for the Collection of Blood from Rats.

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Various routes have been used for obtaining blood from rats. Some of these are: the heart, femoral vein, and the tail. All these routes have been found unsatisfactory for our work. The heart puncture is too dangerous since the number of accidents and deaths is very large. The tail was found unsatisfactory since the amount of blood one could get was small. It also exposes the animal to in-

fection. The femoral vein is very small in rats. We were not able to locate it without cutting the skin. The jugular vein is by far the largest of the peripheral vessels of the rat. Blood may be drawn from it without much difficulty because of the ease in locating it by its pronounced pulsation. The jugular vein of the rat runs anteriorly *over* the clavicle about 10 mm. from the middle of the sternum.

If a rat is given a little ether, placed on its back on a board and tied so that the head is approximately one inch lower than the rest of the body, the hair clipped over the clavicle, it is easy to locate the jugular by the pulsation and to feel the clavicle. With the clavicle to support the vessel and the pulsation to direct us, it is not difficult to place the needle into the vessel. This same route has been used by us for injecting various substances and also for transfusing rats.

It has also been found possible to collect blood from rats according to the above technique without the use of an anesthetic.

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Studies on Calcium and Phosphorus in Bile-fistula Dogs.

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The work of Pavlov,[1] Looser,[2] Wisner and Whipple,[3] Düttman,[4] Dietrich,[5] Gilbert,[6] and Buchbinder and Kern[7] has shown that absence of bile from the intestinal tract of animals leads to osteoporosis. The gross manifestations of the condition are softening of the bones and spontaneous fracture. The condition is not brought about when only small amounts of bile are permitted to enter the intestinal tract. Results in accord with the above were obtained by Seidel[8] in 2 human cases. Two explanations to account for this phenomenon have been advanced: (a) Klinke[9] postulates that in the

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