

intestinal infection is not depressed by the above mentioned amidopyrine barbiturate compound administered from 17 to 30 days. Rabbits thyroidectomized 6 weeks previously and receiving cibalgine develop a leucocytosis in response to the infections comparable to that which occurs in rabbits with thyroids intact.

7997 P

Isolation of *Bacterium Typhosum* When Mixed With Anaerobic, Non-Spore Forming, Gram-Negative Rods (*Bacteroides*)

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The enormous numbers of anaerobic non-spore forming, gram-negative rods reported in the intestinal contents of man (Sanborn¹ and Eggerth and Gagnon²) have not been considered in the routine isolation of pathogenic bacteria, or in the false presumptive tests in water analyses. *Bacteroides* are small gram-negative or gram-positive rods, some of the gram-negative forms being indistinguishable morphologically from the gram-negative pathogenic bacteria. Although they are strict anaerobes, the possibility that they might find conditions favorable for multiplication in mixed cultures with aerobes was considered in this investigation.

Bacterium typhosum (Rawlings) and 2 strains of *Bacteroides*, one isolated from a colon specimen from man and the other from a monkey colon, were studied. The biochemical reactions of the 2 strains of *Bacteroides* are listed in Table I.

TABLE I.

Strain	Gas from peptone	Gas from glucose	Glycerol	Mannitol	Sorbitol	Arabinose	Salicin	Trehalose	Amygdalin	Cellobiose	Glycogen	Rhamnose	Xylose	Lactose	Levulose	Glucose	Gelatin liquefaction	Milk	Indol	Lead acetate
Monkey origin	—	—	—	—	—	a	—	—	a	—	a	a	a	a	a	a	+	a	—	—
Human origin	—	—	—	—	—	—	—	—	a	a	a	—	a	a	a	a	—	—	—	—

— = negative test. a = acid production only. + = positive test.

¹ Sanborn, A. G., *J. Infect. Dis.*, 1931, **48**, 541.² Eggerth, A. H., and Gagnon, B. H., *J. Bact.*, 1933, **25**, 398.

A mixed suspension of these *Bacteroides* strains and *Bacterium typhosum* produced acid without gas in lactose broth incubated aerobically. An experiment was performed with the human *Bacteroides* strain in mixture with *Bacterium typhosum*. This suspension was plated on endo and eosine-methylene blue agar media and incubated aerobically for 24 hours, after which colonies were picked and put into lactose broth. *Bacteroides* was demonstrated in a few of these colonies by the production of acid in the lactose broth after 36 hours' incubation. All of the colonies on the plates were colorless and identical with those of a pure culture of the typhoid bacillus, although plates prepared in a similar manner, incubated aerobically for 48 hours and then placed in an anaerobic jar and incubated for 3 days longer, contained some isolated colonies of *Bacteroides* and some which appeared to be superimposed on the typhoid colonies.

A mixed suspension of *Bacteroides* (monkey strain) and *Bacterium typhosum* was used for inoculation of 12 freshly prepared veal infusion agar slants. These were incubated aerobically at 37°C. Weekly transfers were made from these cultures to fresh slants. Lactose broth was inoculated to test for the presence of *Bacteroides*. In 4 of the 12 cultures, which were transferred at weekly intervals, *Bacteroides* remained viable for 4 weeks. In 5 it persisted for one week and in the remaining 3 it was not found after one week. Only one of these cultures was found to contain *Bacteroides* for 2 weeks without transfer.

An aerobic, 24-hour lactose broth mixed culture of *Bacteroides* and *Bacterium typhosum* in which the production of acid had just begun was used for inoculation of 10 more fresh veal infusion agar slants. These were handled in the same manner as the cultures above. In 8 of these cultures *Bacteroides* remained viable for 4 weeks when transferred at weekly intervals. In the other 2 they were found only after one week. Only one of these cultures contained *Bacteroides* for 2 weeks without transfer. The cultures in which *Bacteroides* remained viable for 4 weeks are still under observation.

A mixture of the human strain of *Bacteroides* and *Bacterium typhosum* was used for inoculation of eosine-methylene blue, endo's, veal infusion, and nutrient agar slants. *Bacteroides* remained viable for longer periods of time on eosine-methylene blue and endo's agar slants than on media which contained no carbohydrate. Results of these studies are recorded in Table II.

Bacteroides were found to grow in aerobic cultures with organisms other than *Bacterium typhosum*. Sucrose, lactose and dextrose

TABLE II.
Persistence of *Bacteroides* mixed with *Bacterium typhosum* in aerobic slant cultures.

Medium	No. of transfers	<i>Bacteroides</i> viable after	No. of days viable when transferred	No. of days viable when not transferred
Endo agar	15	13 transfers	25	11
Eosine-methylene blue	15	13 "	25	23
Veal infusion agar	10	8 "	16	12
Nutrient agar	10	8 "	16	11

broth inoculated with *Bacterium pyocyaneus* and *Bacteroides* showed rapid acid production without gas when incubated aerobically, although the strain of pyocyaneus used did not ferment these sugars. A mixed suspension of *Bacterium coli communis* and *Bacteroides* formed acid and gas in sucrose under the same conditions.

7998 C

Serum Colloid Osmotic Pressure in Normal Pregnancy.

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A slight amount of edema occurs in many women during normal pregnancy. A marked edema or even an anasarca may occur in pre-eclampsia and eclampsia. No adequate explanation has been given for the cause of the edema in normal or toxemic pregnancy.

In the edema of certain types of nephritis, malnutrition, and in some cases of cardiac disease, the cause is found in an abnormally low serum protein concentration. Various studies indicate that edema is likely to occur if the concentration of the serum protein is less than 5.5 gm. % or if the albumin concentration is less than 2.5 gm. %. Dieckmann and Wegner,¹ as well as other investigators, have demonstrated that the concentration of the serum protein in normal pregnancy is at the lower limits of normal. Their average figures obtained from the same women during pregnancy and the puerperium are given in Table I.

The studies of Schade,² Govaerts,³ and Verney⁴ would seem to

¹ Dieckmann, Wm. J., and Wegner, C., *Arch. Int. Med.*, 1934, **53**, 353.

² Schade, H., and Mentschel, H., *Z. f. klin. Med.*, 1924, **100**, 370.

³ Govaerts, M., *Bull. Acad. roy. de med. de Belgique*, 1927, **13**, 356.

⁴ Verney, E., *J. Physiol.*, 1926, **61**, 319.