At P_1 8.4, the same bile specimens or their salts acquired either inhibitive, bacteriostatic or germicidal properties. The more concentrated the biliary salts the greater was their effect on the viable cells. Even small amounts of bile salts, such as 0.5 per cent, destroyed the bacteria in twenty-four hours. At P_1 8.4, glycocholates were more antiseptic than taurocholates, while the same salts in the same concentration could be stimulative at P_1 7.0.

HYGIENE AND PUBLIC HEALTH

UNDER THE CHARGE OF

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The Essentials of Smallpox Vaccination.—LEAKE and FORCE (*Public Health Reports*, 1921, xxxvi, 1975) emphasize the significance of the vaccination reaction, saying: "Absence of this reaction indicates that the virus is incapable of protecting against smallpox, and not that the subject is immune." This reaction may be primary vaccinia or an accelerated reaction in those who retain some degree of immunity from previous vaccination or an attack of smallpox. The accelerated reaction appears earlier than primary vaccinia, is shorter in duration, and decreased in severity by comparison. The necessity for keeping the vaccine on ice is stressed and the technic of the operation by linear incision or by the drill method is given. Dressings are forbidden and a form of certificate is prescribed.

Direct Inoculation Test for B. Botulinus Toxin.—BENGSTON (*Public Health Reports*, 1921, xxxvi, 1665) has devised a rapid method for detecting the presence of botulinus toxin in food. The procedure contemplates the inoculation of a series of animals with varying doses of the juice of the food under examination. Certain of the animals are protected by the two types of botulinus antitoxin, the remainder serving as controls. The diagnosis may be made well within a day in certain cases. ORR (*Jour. Infect. Dis.*, 1921, xxix, 287) has found that the intraperitoneal injection in white mice of at least 100 m.Ld. of botulinus toxin produces symptoms of botulism usually in from two to four hours, and death follows the appearance of symptoms within from one to two hours. He used the following method for determination of type: A number of white mice were injected with about 0.5 cc of the filtrate of the infected food, some of the mice having been previously injected with type A and some with type B antitoxin. If the food contains the toxin of *Bacillus botulinus* type A the mice