ring. Franklin,[1] in his description of ammono bases and basic nitrides, describes several explosive compounds that can be prepared in liquid ammonia. Among them is mercuric nitride, which detonates violently by impact or on being brought into contact with liquid water. Such compounds are generally prepared by metathetic reactions, however. He has recorded no reactions that might occur between metallic mercury and liquid or gaseous ammonia.

Two violent explosions that seem to have been caused by contact of mercury with ammonia have been described by Van Brunt[2] and by Henderson.[3] In both of these cases, however, the mercury was held in containers made entirely of iron or of iron and glass. Franklin[1] has not recorded any explosive compounds of iron that have been prepared in liquid ammonia, but he and several other workers, Ewan,[4] Miller and Roberts[5] and Nieuwland[6] have described the remarkable catalytic properties of iron and steel and of certain iron salts for some reactions that have been carried out in liquid ammonia. It seems possible then that the explosions in question have been brought about by the catalytic action of the metal containers. If any workers with liquid ammonia have in the past noted any explosive reactions between metallic mercury and liquid or gaseous ammonia wherein the reacting materials have been enclosed entirely in glass, the author feels that many workers would welcome the publication of such information.

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A TECHNIQUE FOR THE ELECTRON MICROSCOPIC EXAMINATION OF ENCAPSULATED BACTERIA

A STUDY of encapsulated bacteria is being carried on at the Institute of Paper Chemistry as part of an investigation of the causes for and the control of slime in paper mills.

The bacterial cells were seen, but neither the capsules nor the outlines of the capsules were visible when the specimens were prepared for the electron microscope by the ordinary technique of placing a drop of the bacterial suspension on the collodion film-covered specimen screen and drying. This failure to observe the capsules in the electron microscope is entirely analogous to the difficulty experienced in light microscopy when attempts are made to observe capsular material without the use of special and difficult staining procedures or without Gins India ink smear technique. In view of our failure to prepare satisfactory specimens for the electron microscope by the usual technique, the use of a method similar to Gins was clearly indicated. The following procedure was found convenient and satisfactory:

India ink is diluted with about an equal volume of distilled water and a drop of the diluted ink placed on a slide and mixed with a drop of the bacterial suspension. Smears are made as in Gins method. Without fixing and staining the smear, a few drops of a 2 per cent. solution of collodion in amyl acetate are placed on the slide outside of the area covered by the smear and the slide is tilted and turned to allow the collodion solution to run over the smear. The excess solution is removed by a blotter on which the end or corner of the slide rests and the thin film on the slide is allowed to dry. Immediately thereafter, the slide is gently lowered, film side up and with its length forming a 45-degree angle with the water surface, into a dish of distilled water. The collodion film separates from the glass and, carrying the smear with it, floats on the surface of the water. The specimen screens are then placed on the film and handled in the usual fashion for preparing specimens to be examined in the electron microscope.

The specimens prepared for the electron microscope in this way clearly show the outline of the capsules surrounding the bacterial cells.

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