

## New Instruments and Suggestions

### RED MERCURIC IODID, A PHARMACEUTICALLY "SOLUBLE," THERAPEUTICALLY INSOLUBLE, SALT

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Considerable interest recently has been shown by physicians in the use of oily "solutions" of red mercuric iodid (mercury biniodid) by intramuscular injections. Properly prepared, a solution of the biniodid is an elegant and eligible method for intramuscular administration; but it is well to understand that in the last analysis the biniodid is no more soluble than the salicylate or the mild chlorid. I have proved by experiment that the biniodid immediately is precipitated by fresh blood serum. It naturally follows, therefore, that the drug is released from solution as soon as injected into the tissues and deposited as an "insoluble" salt. I later injected a dose of 1 grain into the abdominal muscles of a rabbit. On dissection, about six minutes later, the mercurial salt was found free in the tissues. As to its subsequent "solution" and absorption from the site of injection, I am not as yet in a position to state, from experiment. So far as therapeutic effects are concerned, the evidence seems to show that such solution and absorption apparently occur. The foregoing is worthy of note in connection with the intravenous use of "solutions" containing red mercuric iodid. I will state, however, that I frequently have administered intravenously red mercuric iodid dissolved in potassium iodid, thus far with no harmful effects. As to the efficacy of intramuscular injections of the biniodid, I am not as yet quite satisfied. I am using it, however, quite extensively, in the hope that it may prove more efficacious than some of the other insoluble salts.

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### A MODIFIED GRAM STAIN FOR DIPHTHERIA

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In Stitt's "Practical Bacteriology," second edition, is the formula for "an easily made and quite permanent gentian violet stain":

Saturated alcoholic solution of gentian violet.....25 c.c.  
Five per cent. dilution of liquor formaldehydi.....75 c.c.

This stain is unreliable as a Gram stain, and was omitted from the third edition of the book.

During the past two years at the United States Naval Hospital, Naval Training Station, Great Lakes, Ill., over 3,000 cultures were made from the throats of recruits as they came to the station, to determine whether or not they were diphtheria carriers. Two and five-tenths per cent. were positive.

There were also two small epidemics of diphtheria. In all, more than 4,000 cultures were made on Loeffler's serum and stained by the following method:

1. Stain with the foregoing gentian violet stain for two minutes.
2. Flood preparation with one-half strength Gram's iodine solution for one and a half minutes.
3. Immerse slide seven or eight times in a jar of 95 per cent. alcohol.
4. Counterstain with saturated aqueous solution of Bismarck brown for four minutes.
5. Wash in water and examine.

The Klebs-Loeffler bacillus, when stained according to this method, appears as a brown rod, and the metachromatic granules are stained a deep violet. In other words, the bipolar granules alone remain gram-positive.

A single diphtheria bacillus can quickly be seen in a field with numerous other kinds of organisms.

The picture is that which we are supposed to get with Neisser's stain, but the organisms are stained more deeply, and the results are more constant.

U. S. S. Illinois, in care of Postmaster, New York.

## Therapeutics

### MOUTH INFECTIONS

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#### PYORRHEA ALVEOLARIS

The occurrence of pyorrhea alveolaris varies among different classes of people. At present the care of the teeth has an important place in the daily routine of the better educated people, and although cases do exist among them, they are less frequent than among those who are strangers to the toothbrush and to mouth cleanliness. Bass and Johns<sup>9</sup> state that they found pyorrhea in 95 per cent. of the cases examined by them. It is possible that their cases were collated from the poorer classes of people and from those suffering from tooth affections.

By pyorrhea alveolaris is meant a condition in which pus to a greater or less degree is present at the gingival margins affecting the peridental membrane and ultimately exposing the bone. As a result, pus pockets, from which pus escapes freely or may be easily expressed, occur. Predisposing factors are bad crowns, careless fillings, improper bridging, and, in all classes, neglect of the care of the teeth. Bacteria find a lodging place in the tartar deposited on the teeth or under a cap, and set up an inflammation. The gums become painful and tender, and there is a tendency to bleed easily from the slightest touch. Gradually the gums recede until pockets form between the teeth and gums in which the bacteria grow and thrive unchecked. Unless the disease is stopped, the teeth lose their firm support in the alveolar processes and become loose.

Pyorrhea alveolaris seems directly responsible for a large number of body ailments, produced by the entry into the lymph or blood stream of the bacteria from the infected gums. Their toxins also produce systemic disturbances. It is also true that general systemic infections, by lowering the resistance of the gums, may be the starting point of pyorrhea alveolaris, which will continue after the general infection has been cured. Removal of the pus may cure the associated condition. It is also probable that the pyorrhea, through its micro-organisms and their toxins, reduces the physical resistance of the body to such an extent that it is readily susceptible to other invasions.

When, by removal of the pyorrhea, the body resistance is restored to normal, the systemic condition is cured through the action of the antibodies in the blood and the cells. Hartzell,<sup>10</sup> in an examination of the teeth in 1,020 cases of mouth infections, in all of which there was pyorrhea, found eighty with disturbances of the alimentary tract, and all with evident signs of malnutrition. Other persons were suffering from migraine, and still others were neurasthenic. There were cases of arthritis and endocarditis. Anemia and even pernicious anemia were found associated with pyorrhea. Craig<sup>11</sup> found a number of nervous disorders due to peridental infection. The common symptom, paresthesia of the fingers and toes, "pins and needles," he states, may be due to pyorrhea, as may otalgia, tic douloureux, and neuro-

9. Bass, C. C., and Johns, F. M.: Pyorrhea Dentis and Alveolaris, THE JOURNAL A. M. A., Feb. 13, 1915, p. 553.

10. Hartzell, T. B.: The Responsibility of the Dentist and Physician in Regard to Mouth Infections and Their Relation to Constitutional Effects, THE JOURNAL A. M. A., Oct. 4, 1913, p. 1270.

11. Craig, G. B.: Peridental Infection as a Causative Factor in Nervous Diseases, THE JOURNAL A. M. A., Dec. 5, 1914, p. 2027.