

bear in mind, that in such cases non-union or soft fibrous union is the rule, and firm bony union the rare exception.

#### Hospital Gangrene.

Twenty-five years ago, during the American Civil War and since, and before the time of Hueters, Pasteurs, Listers, Kochs, and of others, researches concerning micro-organisms as possible causes of disease, suppuration, etc., the army pestilence, known as "hospital gangrene," was considered a constitutional affection. Its correct etiology was not known. It was thought to be a "relic" of the oriental armies which had invaded Eastern Europe during the latter part of the 17th century, and was classed along with cholera, typhus, scarlatina, etc., among the contagious diseases. Of late, its true character has been established beyond a doubt, and at present it is classed among the affections, the cause of which is to be found in thus far unknown disease-producing germs suspended in the surrounding atmosphere. But although it was generally looked upon as a constitutional affection, it occurred to a few of the army—Goldsmith and others—that it was purely local at the outset, becoming constitutional afterward by the absorption of poisonous exudations—a theory comparable to the present accepted explanation of diphtheria, with which, by the way, some authors consider it to be closely related, if not identical.

During the year 1864, at the Hospital No 2, Chattanooga, Tenn., I had occasion to treat a number of cases of hospital gangrene, and I became convinced of its purely local character at the outset. At that time the "germ theory" had not been advanced: at least, I had no knowledge of it; but what I did know, and what I had occasion to observe almost every day, was that formerly healthy wounds would, under certain local conditions, become poisoned, and within a few hours be transformed into a jelly-like, fermenting, and exceedingly offensive mass, after which constitutional disturbances would soon follow. I observed further, that when energetic topical treatment (nitric acid applications) was adopted, augmentation of the disease would to some extent be checked; but it was not until the systematic use (externally) of bromine was advised that we became successful in combating this loathsome affection. We then had found the remedy (germicide) *par excellence*, and

were enabled to neutralize, as we then termed it, the poison effectually; at least, in those cases where no constitutional symptoms had intervened.

Our mode of procedure would be to "pack" the wound with cotton previously saturated with a solution of bromine and alcohol, 1 part to 4, and allow this mixture to penetrate the infested wound and surrounding tissue. (Experience showed this to be of the utmost importance, as superficial applications failed to have the desired effect in every instance.\*) After several hours—generally twelve—of action, the surrounding tissue to the extent of  $\frac{1}{2}$  to  $\frac{3}{4}$  inch would be turned into an eschar, the removal of which was hastened by warm poultices of yeast and charcoal.

After the removal of this slough, the wound, although greatly enlarged, would invariably present a healthy, granulating surface, with no trace of its former infection; and if then isolation could be effectually established, the healing process would from then on progress favorably.

In a few instances only were relapses to be recorded. These were subjected to this procedure a second time, or oftener, with the same beneficial effect as far as regards cure, but the wounds then would become greatly enlarged, and often disfiguring sequelæ could not be prevented.

During my stay at Chattanooga, diphtheria was a frequent visitor of the families remaining after the occupation of the town by the Union armies. There were but few children, and the many impediments to their social intercourse may have prevented the spreading of the malady; but the commingling of soldiers and civilians was uninterrupted, and we army surgeons were called on to attend their (the citizens') sick and to deliver their parturients.

If the relationship of these affections or of their inciting germs should be proven, I confess that I may have been one of the carriers of the contagion to our wards, and the unintentional cause of much suffering and distress.—"Anonymous" in *Medical Bulletin*.

\* An interesting phenomenon I had occasion to observe in one instance: One patient had received two flesh wounds, one on thigh and one on arm (biceps muscle). The arm wound became gangrenous several days in advance of the second wound, and this had in consequence to undergo treatment so much later.