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ART. XVII.—ON THE STATE IN WHICH THE MERCURY EXISTS IN THE HYD. C. CRETA. AND PILL-HYDRARG.

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Read before the T. M. C. Society, January 6, 1847.

The great uncertainty prevailing with respect to the state in which the metal exists in the mechanical preparations of mercury, and the difficulty of arriving at any satisfactory conclusions on the subject, must, I should imagine, have struck every person whose attention has been at all directed to the inquiry.

On referring to the works of different writers on materia medica, we meet with the most contradictory statements; nor are we more fortunate in obtaining a clearer insight into the matter, when we review the results of experiments made for the purpose of ascertaining this point, the experimenters having too often arrived at opposite conclusions. Neither does physiology, in this instance, lend us any assistance, but on the contrary, rather tends to make the matter more obscure; for although we find that in most cases fluid mercury may be taken in repeated doses without producing the peculiar physiological action which usually follows the frequent exhibition of its oxides or salts, yet it has occasionally caused this effect.

It is, however, admitted by most authors, that fluid mercury is usually destitute of all action upon the system, and that it may be taken without inconvenience, more than arises from its mechanical properties. Many are also of opinion that it is equally inert when minutely divided, while some, on the other hand, regard it in this state as a most energetic substance. The former consider the mercury in the apparently mechanical preparations as oxidated by the processes employed in making them; the latter maintain that the metal is merely finely divided. Although writers on materia medica and pharmacy are thus divided in their opinions, chemists are generally agreed in considering these preparations as containing chiefly the finely divided metal.

It has always appeared to me that if the activity of these preparations does not depend upon their containing finely divided mercury, but upon the presence of its oxide, the methods of making them are most faulty and objectionable. It would surely be better to mix the previously prepared oxide—if it alone be the active con-

stituent—with the other ingredients, as was done in preparing the ointment of the grey oxide. This method of mixing blue pill and mercury with chalk, has been proposed and followed by a few persons in England of late years, with what success I cannot say, but the ointment is well known to have failed, and is now scarcely ever used.

From these considerations I was led to make a few experiments upon the mercury with chalk and blue pill, more for my own satisfaction than with the hope of throwing any new light upon a subject which has engaged the attention of many more able investigators than myself. I did not think it worth while to include the mercurial ointment in my researches, as I consider it has been satisfactorily proved that in this preparation nearly all the metal is in a state of minute division, a small portion only being oxidated. That this oxidized portion is not the only active part of the ointment I think I shall be able to prove hereafter. At present I will proceed to lay before the Society the results of my experiments, and the deductions I have drawn from them.

The samples of blue pill were made the subject of investigation. They were all treated successively with water at 170° or 180°, rectified spirit and æther; the mixed liquors acidulated with acetic acid, were not precipitated by sulphuretted hydrogen. The residues were treated with diluted acetic acid at 150°; the liquors filtered and treated with the same re-agent gave no precipitate.

One of the specimens of blue pill I have had in my possession for some years, and I have always found it very active. The other specimens were recently obtained from respectable druggists in this town. All these are, I believe, of English manufacture.

The same number of samples of hydrarg. c. creta., were next submitted to investigation; they were obtained from druggists in this city who had procured them from England.

Sixty-four grains of No. 1, (about 2 or 3 years old) were treated with successive portions of warm diluted acetic acid, the mixed liquors filtered and precipitated with hydrochloric acid; this precipitate, after being carefully washed and dried, weighed 2.5 grs., which give 2.2 grs. as the quantity of sub-oxide (protoxide of the