

ART. II.—*Observations on the Antimonial Powder of the last Dublin Pharmacopœia (1850), and on the Medical Effects of the Teroxide of Antimony.* By JONATHAN OSBORNE, M. D., King's Professor of Materia Medica, Physician to Mercer's Hospital, &c.^a

It is well known that the antimonial powder of the Pharmacopœias was first adopted as an imitation of Dr. James' fever powder, but the opinion has for a long time been gaining ground among practitioners, that it is nearly, if not altogether, inert. I have given it in various doses, large and small, and long ago made a series of trials expressly on this subject, but could never perceive any sensible effect except when combined with calomel. A powder of two grains of calomel and four of antimonial powder, taken at night, was not unfrequently followed by perspiration, but when given alone it never appeared to me to have any effect, and I am thus fully enabled to confirm the statements as to its inefficiency, made by Mr. Hawkins, Dr. Duncan, and Dr. Elliotson.

That it should be thus inactive may be explained from the fact, that the antimony is almost entirely in the form of antimonious acid, and that the proportion of teroxide of antimony it contains is insignificant, never amounting to 4 per cent., according to Dr. MacLagan, and totally absent in some samples, according to the experiments of Mr. Phillips.

In the Philosophical Transactions for 1801, Mr. Chenevix described a mode of preparing antimonial powder in the humid way, in which teroxide of antimony was precipitated from the hydrochlorate by ammonia. It was strange that although this process was referred to in terms of high commendation by almost all the succeeding writers on pharmacy, and was admitted to possess the great advantage of uniformity of oxidation, of which the process by heat was unsusceptible, yet that it never was admitted into any of the pharmacopœias. It was not till the publication of the last edition of the Dublin Pharmacopœia in 1850, that a mode of preparing the powder by precipitation appeared, and in this a great improvement was introduced by using tartar emetic instead of the solution in hydrochloric acid which Mr. Chenevix had employed. This preparation, however, though bearing the name of antimonial powder, is yet different from it in one respect, and that the most important, in all the antimony it contains being exclusively in the state of teroxide. It has therefore appeared to me desirable to ascertain its medical effects by actual experi-

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ment. The only account of the effect of the powder, as prepared by Mr. Chenevix, that I can find, is contained in the following words, with which his paper concludes:—"I gave some of my powder to Dr. Crichton, Dr. Babington, and Mr. Abernethy, gentlemen whose extensive practice and acknowledged skill sufficiently enabled them to judge of its medical properties. They all concur in opinion, that in its general effects it agrees with Dr. James' powder and the pulvis antimonialis, but that it is more mild, and consequently may be given in larger quantities, seldom producing nausea or vomiting, in doses of less than eight or ten grains." The results I have obtained are very different.

I have tried it in twenty cases, selected for careful observation in Sir Patrick Dun's Hospital. The powder was prepared according to the process of the Dublin Pharmacopœia, 1850, by Mr. Morgan, whose accuracy and ability are well known. The dose given in every instance was five grains in the evening and the same at bed-time. The cases were chiefly rheumatism, pneumonia, and bronchitis, and the patients were all adults. In order to present a view of the per-centage of the effects, and to facilitate recollection and comparison with other observations, I have reduced them to the form of decimals.

TABLE of the Effects of the Pulvis Antimonialis of the Dublin Pharmacopœia, 1850. Dose, five grains evening and night.

More or less gentle Action on the Bowels.	Nausea.	Vomiting.	Perspiration.	Perspiration without Nausea.	No perceptible Effect.
·50	·45	·20	·65	·20	·10

In order to ascertain the effect of the teroxide of antimony taken separately, I tried some prepared by Mr. Morgan according to the Dublin Pharmacopœia, 1850. It was given in three grain doses evening and night, and to the same average class of cases as the above selected in Sir Patrick Dun's and Mercer's Hospitals.

TABLE of the Effects of the Teroxide of Antimony (Algarotti's Powder), given in doses of three grains evening and night.

More or less gentle Action on the Bowels.	Nausea.	Vomiting.	Perspiration.	Perspiration without Vomiting.	No perceptible Effect.
·60	·40	·15	·70	·40	·05

In order to try how far the action of the teroxide could be influenced by the presence of acids, I selected six of the cases in which there had been no effect, or only perspiration, and added to each dose the same weight of citric acid. The result was in every case either nausea, vomiting, or purging. Hence it appears that the teroxide is capable of combining with acids in the stomach, and of forming salts resembling tartar emetic. I find also that the addition of one or two grains to small doses of either rhubarb or aloes produces a remarkable augmentation of the purgative effect of these articles.

The conclusions to be deduced from my observations are:—

1st. That the antimonial powder of the present Dublin Pharmacopœia (1850), differs from that hitherto prepared, not only by containing the antimony exclusively in the state of teroxide, but by medical effects of which the older preparation is nearly if not entirely destitute.

2nd. That as it has not been identified by a distinct name (which is to be regretted), the prescriber should, to avoid confusion, always distinguish it as the antimonial powder of the Dublin Pharmacopœia of 1850.

3rd. That the teroxide of antimony (Algaroth's powder), inasmuch as it contains all the active part of antimonial powder, may be safely substituted for it, the phosphate of lime not contributing to its virtues, and having been at first accidentally associated with it in consequence of the imperfect chemistry of the time when the original process was devised.

4th. That the average maximum dose of the teroxide of antimony, as a diaphoretic for an adult, is three grains evening and night.

5th. That the addition of acids renders it more emetic and more purgative.

6th. That the occasionally violent effects ascribed to it by some of the older writers were most probably due to the presence of chloride of antimony, from want of care in the preparation, and that this may be most effectually excluded by precipitating it from tartar emetic by means of an alkaline solution.