

THE EFFICIENCY OF HYDRATED OXIDE OF IRON AS AN ANTIDOTE FOR ARSENIC.

To the Editor, *Journal A. Ph. A.*:

Dr. Horatio C. Wood objects to our conclusions that freshly precipitated ferric hydroxide is of no practical value in the treatment of arsenical poisoning, and quotes our own figures to prove the contrary. We were fully cognizant of the value of these figures when we concluded that "the only change produced by the antidote is an unimportant delay in the average time of death, due, we think, to the nature of the antidote, which delays absorption, rather than to chemical neutralization of the arsenious trioxide." We have never believed that there was a complete destruction of the toxicity of the arsenic. Dr. Wood seems also to infer that the prevention of vomiting in our experiment was an error. However, Bunsen and Berthold, in introducing this as an antidote, also prevented vomiting in their experimental animals. This they did by the rather objectionable method of ligating the oesophagus.

Now it seems perfectly legitimate to use a similar method in studying the effects of this alleged antidote at this stage as when it was introduced. Such a method, however, would never be used in the treatment, as is perfectly obvious. Our study, however, was not one of treatment but to test the value of the antidote.

Dr. Wood also thinks that we should have included the work of other investigators, especially those of Dr. Watt (*Ohio Medical and Surgical Journal*, 1861, page 287). Dr. Wood does not quote this article quite correctly when he says four animals received no antidote, all of whom died. The facts are seven received no antidote, of whom two recovered. We think it is of interest to give a synopsis of Dr. Watt's experiments as follows:

| No. of expt. | Wt. of dog, lbs. | Amount As ₂ O ₃ in grains. | Antidote. | Result. |
|--------------|------------------|--|-----------|---|
| 1 | 50 | 2 | None | Recovered 5 hrs. |
| 2 | 60 | 3 | None | Recovered 2 days |
| 3 | 18 | 3 | None | Died 6 hrs. |
| 4 | 15 | 3 | None | Died 8 hrs. |
| 5 | 12 | 6 | None | Died 1½ hrs. |
| 6 | 25 | 6 | None | Died 6 hrs. |
| 7 | 30 | 6 | None | Died 5 hrs. |
| 8 | 10 | 2 | Antidote | Better 3 hrs. |
| 9 | 15 | 3 | Antidote | Better 1½ hrs. |
| 10 | 12 | 3 | Antidote | Better 3 hrs. |
| 11 | 35 | 4 | Antidote | Recovered perfectly in 3 hrs. |
| 12 | 20 | 4 | Antidote | Recovered and partook of food in 3 hrs. |
| 13 | 40 | 5 | Antidote | Recovered in 8 hrs. |
| 14 | 18 | 6 | Antidote | Recovered in 8-9 hrs. |
| 15 | 15 | 6 | Antidote | Died 6 hrs. |
| 16 | 25 | 6 | Antidote | Gradually recovered |
| 17 | 15 | 6 | Antidote | Vomited a few times and showed no further signs of distress |
| 18 | 18 | 6 | Antidote | Showed no further signs of distress and no symptoms |
| 19 | 15 | 7 | Antidote | Soon recovered |
| 20 | 25 | 7 | Antidote | Recovered 5 hrs. |
| 21 | 20 | 8 | Antidote | Recovered in about 8 hrs. |
| 22 | 30 | 8 | Antidote | Recovered |

Now it is perfectly obvious to anyone familiar with arsenical poisoning that recovery does not take place in a few hours as these experiments show. For this reason all such work has been ignored by pharmacologists. No one can say whether or not all of these animals would not have died inside two weeks, at any rate at a later date. If such had happened, as in the case of our own, we should consider that the antidote caused, at most, an unimportant delay in the time of death. This delay need not be due to any specificity, but to the volume of the antidote. Similar

results might have been obtained by using milk of magnesia, mucilage of acacia or anything that would have given volume. It is not necessary to run a series of experiments to prove this last statement, since it is a well-known and accepted fact in pharmacology that substances in the stomach delay the absorption and the action of poisons.

It is a notable fact in Watt's experiments that all his dogs vomited. This is the saving principle in all methods of treatment, and in this particular case, vomiting or removal of the poison is much more important than the chemical nature of the antidote. The volume, of course, aids in the elimination. In this respect we think that the action of ferric hydroxide with magnesium oxide U. S. P. does not differ from other voluminous inert matter.

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HOTEL FACILITIES AT ASHEVILLE DURING A. PH. A. CONVENTION.*

It has been announced in this JOURNAL before that the American Pharmaceutical Association would meet in Asheville, North Carolina, on September 3-8 and that the Kenilworth Inn will be official headquarters.

It is not necessary that all attending delegates stop at the same hotel; they may distribute themselves to such other hotels than the Kenilworth as their choice dictates. There is given below a list of the houses in Asheville which are within convenient reach of official headquarters together with the rates they offer. The prices in every case are for each person. It is to be observed that most of the Asheville hotels are conducted on the American plan, as is the case in resort towns. Reservations should be made at once by delegates certain of attending the convention and as soon as possible by those who are now undecided.

GROVE PARK INN.

(American.)

| | |
|----------------------------------|--------|
| All rooms with bath. | |
| Two persons in room, each person | \$9.00 |
| One person in room | 12.00 |

(As many as possible, but Insurance convention is meeting there, and they come first.)

BATTERY PARK.

(American.)

| | |
|---------------------------------------|--------|
| Single room without bath, each person | \$6.00 |
| Single room with bath, each person | 8.00 |
| Double room without bath, each person | 5.00 |
| Double room, with bath, each person | 7.00 |

(Guests taking lunch away from hotel will be allowed \$1.00 and for dinner \$1.50.) (Can take 200.)

SWANNAHOA-BERKELEY.

(European.)

| | |
|---|-------------|
| Dble. room without bath, ea. person | \$1.50-2.00 |
| Dble. room with bath, ea. person | 2.00-2.50 |
| (Can take 40 to 50 "if they will double," but could not give single rooms.) | |

LANGREN.

(European.)

| | |
|--------------------------|-------------|
| Single room without bath | \$2.00-2.50 |
| Double room without bath | 3.00-3.50 |
| Single room with bath | 2.50-3.50 |
| Double room with bath | 4.50-6.00 |

(Can furnish 50 rooms.)

OFFICIAL HEADQUARTERS—KENILWORTH

(American.)

| | |
|--|-------------|
| Single room without bath, each person | \$8.00 |
| Double room without bath, each person | 7.00 |
| Double room, with twin beds and private bath, each person | 10.00-12.00 |
| Double room with twin beds and use of connecting bath, each person | 8.00 |
| Fourth floor double rooms, twin beds, running water, each person | 6.00 |

(Take 250.)

Other desirable hotels in Asheville are the Manor, with accommodations for 250, and Margo Terrace, with accommodations for 125. Both are on the American plan and both offer desirable quarters. However, neither promise convention rates to A. Ph. A. delegates.—J. G. BEARD.

*For rates and routes see under Societies and Colleges, in this issue of the JOURNAL.