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For the sake of investigating this point further Dr. Putnam took from thirty to forty-five grains of subnitrate of bismuth daily for two weeks. At the end of this time, while still taking the drug, his urine contained bismuth. After ceasing to take the drug for twenty-four hours he again took iodide of potassium, and his urine again contained bismuth. The most reliable way to avoid the error is to make sure that the patient has taken no bismuth within a considerable period before the examination for lead is made. Dr. Putnam was obliged to omit two cases from his collection on account of this discovery.

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The Association then adjourned to meet at 8:30 P.M.

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Present—Drs. Edes, Eskridge, Weber, Webber, Morton, Walton, Shaw, Putnam, Ott, G. M. Hammond, Amidon, Dana, Sinkler.

Remarks on Dr. Putnam's Paper.

Dr. WEBBER, of Boston, said that the paper was an interesting one, and he believed that we had not yet got at the bottom of the influences which lead may have upon the nervous system. Dr. Putnam had spoken concerning various sensory disturbances, particularly anæsthesia, which some of his patients suffered from. Dr. Webber had noticed in every case of lead-poisoning affecting the spinal cord, which he had examined, that the patients had various disturbances of sensation. These were sometimes so insignificant that patients paid but little attention to them, and it was necessary to cross-examine and return to the subject time after time, in order to find out whether or not these disturbances of sensation existed. At other times the disturbances were so marked that the patients spoke of it themselves. Dr. Putnam had also mentioned one source of error in examining the urine for lead, and Dr. Webber wished to speak of another, namely, that if the urine is allowed to stand and undergo partial decomposition, it becomes alkaline, and a chemical reaction takes place between alkaline urine and the glass itself, by which lead is set free and appears in the urine. He had therefore been in the

habit of asking patients to put a small quantity of acetic acid into the bottles in which the urine was preserved, in order that this source of error might be excluded.

Dr. MILLS, of Philadelphia, said that Dr. Putnam's paper had interested him in a direction of which he thought it worth while to speak; that it is a proper view concerning the nature of this and other metallic toxic poisons. He thought that not a sufficiently comprehensive view of cases of this kind was usually taken. Every one in practice had seen cases of toxic effects upon the nervous system produced by arsenic, copper, and other metallic agents, and also such as were manifested by diphtheritic paralysis, paralysis following various so-called zymotic diseases, and we were apt to take a too limited view with reference to these agents. Just as Dr. Putnam's cases had pointed out, while we are likely to have typical forms of the affection, we may get affections of all kinds, cerebral, spinal, and otherwise, and he had seen not only bilateral paralysis of the extensors, but almost every form of paralytic affection, and also some forms of tremor in lead-poisoning. In a paper which he had read on arsenical paralysis he referred to a number of cases found in literature, and quoted the view expressed by Ringer in his work on therapeutics, which is a very suggestive one. Ringer suggests that these poisons affect protoplasm, and Dr. Mills thought there was a great deal in that single sentence of suggestion, and he thought that if cases of lead paralysis were studied in their extreme minutiæ it would be found that not only the nervous system was affected, but that other organs were involved, either in the way of diminution of their physiological function or their elective action, and that the nervous phenomena were perhaps largely in proportion to the effect produced of this character. Certainly it is so in arsenical and phosphorus poisoning, and perhaps in diphtheritic poisoning, where myelitis may occur as a result of the action of the toxic agent, or neuritis attended with myelitis, and the tissues everywhere affected; that is, the poison is a protoplasmic one, and has a particular selection, for reasons which we do not at present know, for certain parts and certain systems.

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AMERICAN NEUROLOGICAL ASSOCIATION.

NINTH ANNUAL MEETING.

First day, afternoon session.

The American Neurological Association convened at the New York Academy of Medicine, June 20, 1883. Dr. WILLIAM A. HAMMOND, of New York, the retiring President, called the Association to order at 2:30 P.M., and, after the following remarks, introduced the President-elect—Dr. Robert T. Edes, of Boston.

Present—Drs. Edes, W. A. Hammond, Mills, Morton, Webber, Dana, Putnam, Gibney, Shaw, Birdsall, G. M. Hammond, Amidon, Spitzka, and Ott.

Dr. HAMMOND said he had nothing special to remark with reference to the work of the Association at its last meeting, except to call attention to the fact that the papers read seemed to have attracted wide attention; for, at least half a dozen of them had been translated into almost every language in Europe, either wholly or in part. It seemed to him that there is a growing interest in neurological science, yet not so much, perhaps, as the subject deserves.

He hoped that the proceedings of the meeting might be as decisive, with reference to the prosperity of the Society, as were those by which it had been preceded. Dr. Hammond thanked the Association for the honor conferred upon him in electing him their presiding officer last year, and then introduced the President-elect, saying he had no doubt that Dr. Edes would receive fully as much consideration as had been extended to him, and would probably give

prescription had been taken at the last dose. It seemed to him that if that was so it was a matter of considerable importance with reference to the combination of strychnia and hydrobromic acid. Strychnia is soluble in phosphoric acid, but it seems to be precipitated in the presence of bromine. He thought that the same thing occurred when any one of the soluble bromides is given in conjunction with strychnia.

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