

Beard (Geo. M.)

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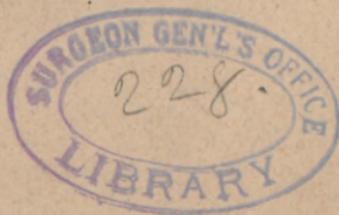


GEORGE M. BEARD, A.M., M.D.

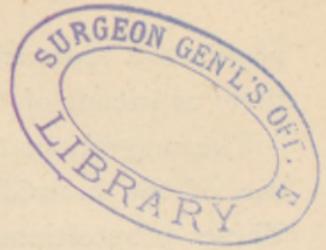
MEMBER OF THE AMERICAN NEUROLOGICAL ASSOCIATION, ETC.

Read before the American Neurological Association, June, 1881

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## HOW TO USE THE BROMIDES.\*

By GEORGE M. BEARD, A.M., M.D.,

MEMBER OF THE AMERICAN NEUROLOGICAL ASSOCIATION, ETC.

THE bromides are among the few great and sure remedies that medicine has at its command. They take rank with opium, quinine, and electricity, as forces that we can, in a good degree, depend upon to obtain positive results; and the introduction of them into medicine has made an era in the treatment of diseases of the nervous system.

Without the bromides we should be—in the treatment of functional nervous diseases—as much disarmed as one would be in the treatment of malaria without quinine. To a very considerable extent the bromides have taken the place of opium, which was formerly borne much better than now. Very many nervous patients, indeed, are so sensitive to opium—being kept awake instead of being put to sleep by it—that, without the bromides, we should be, in many cases, almost helpless; particularly where immediate sedative effects are required.

It is because the bromides are remedies of such enormous efficiency and of such certainty in their action that they have been over-used, just as the other great remedies, opium, quinine, iron, and calomel, have been over-used; and hence there has been reaction against their use; a dis-

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position to reproach them as enemies, rather than praise them as friends of the nervous.

The suggestions that I am here to give in regard to the use of the bromides may be put in these propositions. These propositions apply especially to *other functional nervous diseases than epilepsy*, since the use of the bromides in epilepsy and epileptoidal states has been more studied and is more generally understood. It is not generally known that the bromides are of far greater value in many other nervous diseases than in epilepsy.

*First.* The object of using the bromides is usually to produce a definite effect of *bromization* in a greater or less degree.

Bromization is an abnormal state; is, in a certain sense, disease artificially produced; but it is one of the canons of therapeutics that we can cure disease by disease; one set of symptoms being used as scourges to drive out another set of symptoms.

Bromization is a condition of degrees, ranging from very mild sleepiness or general sedation to profound stupor and unconsciousness, insanity through the bromic breath, bromic acne, profound muscular debility, difficulty of articulation, and lowering of all the functions. Drowsiness in the daytime is not always the first symptom of bromization, although it usually is. In some cases aching of the limbs, perfectly simulating a common cold, is first noticed. Debility sometimes precedes drowsiness. All these, and the severer symptoms, may persist for several days after ceasing to take the drug; therefore passengers wishing to avoid sea-sickness, and who go on board of the steamer well bromized, may not need to take any more of the medicine during the entire voyage to Europe, unless the weather should be rough.

In therapeutics the severest effects of bromization, or

bordering on the severest (for the very severest mean death—since we can kill one with the bromides, just as surely as we can with the pistol, if we but give them freely enough and long enough—), are never needed ; the medium effects may be required in certain diseases—as in epilepsy—for certain emergencies or crises, in hysteria or neurasthenia, and also as preventives or curatives in sea-sickness ; but the mild and incipient symptoms are all we need to the majority of cases where the bromides are to be given.

It is possible, it is even probable, that good effects come from the bromides without any real symptoms of positive bromization ; but, usually, little demonstrable good comes from their use unless bromization is produced ; for sleep, by night or day, is itself in a mild phase, one of the symptoms of bromization.

Last year a druggist in Liverpool told me that he was putting up bromide of sodium in doses of ten grains for those who were going to sea and who supposed that they were taking the treatment recommended in my work on sea-sickness. Those who take the bromides in that way will be likely to fail in their attempt to cure or prevent sea-sickness, and they will also fail in the treatment of very many other nervous diseases.

*Secondly.* To rapidly induce bromization it is usually an advantage—if not absolutely necessary—to give immense doses ; all the way from thirty to one hundred grains, more or less.

Placing aside idiosyncrasies—for some persons are unduly susceptible to the bromides, as some are unduly susceptible to opium or quinine—placing aside these idiosyncrasies, it is not of much use to give bromides, for any purpose whatsoever, in doses of less than twenty or thirty grains ; it is better to give—except in initial doses, where we wish to test the temperament of the patient—as much

as half a drachm, if not more. I rarely prescribe so small a dose as twenty grains, and often prescribe as high as a drachm, or more. It seems to be pretty clear that it is possible to give the bromides in small doses, say fifteen or twenty grains, two or three times a day, for a long period, without getting any effect, good or bad; whereas, if the same patients take the same remedy in doses of thirty or sixty grains, for *a few days* only, they become more or less bromized, and with all the good effects that bromization can produce.

In epilepsy, the necessity of giving doses of considerable size is recognized more and more; but it is not generally allowed, even by neurologists, that in neurasthenia or hysteria doses of even greater size are admissible, proper, and necessary, if we would get the results we seek.

In many cases a single large dose of bromide, say one hundred or one hundred and twenty grains, or even a larger amount, given in a tumbler of water, may be sufficient of itself, without any repetition, in any quantity, to break up an attack of hysteria or sick headache or seasickness; whereas, the same case in the same condition, treated by divided doses of the same remedy, might not be affected at all.

It sometimes seems to be necessary to overwhelm the nervous system with the sedative effects of the bromide, in order to get bromization.

The book doses are poor guides for those who wish to get the therapeutic effect of the bromides.

*Thirdly.* The bromides should be given in these immense doses for a *short time* only, save in epilepsy and epileptoidal conditions. The evil effects of the bromides, of which we hear so much, do not appear, as a rule, except when the dose is very large, from taking them a short time, say a few days or a week, more or less, but from

keeping them up weeks or months, without any intermission, or without the counteracting effects of tonics, or without the close and careful study of the idiosyncrasy, which is so important in the use of this, as well as in the use of all other powerful remedies.

Indeed, it is not safe or wise to give these large doses of bromide to any patient with whose constitution we are not familiar, without keeping him under our eye, and watching the effects closely. The bromides are powerful remedies, and they may be dangerous as well as powerful, but if we use them wisely, we can obtain and utilize their full power without the danger.

In some cases bromization appears very rapidly indeed; in less than twenty-four hours after beginning treatment with these large doses. Sometimes a single large dose of one hundred grains or more is enough without any more (small quantity or large) to bromize a person. Other persons may take these large doses for three or four days, or even longer, without getting any easily demonstrable effects of bromization; they do not feel especially sleepy by day—which is one of the important symptoms—and the fauces have not lost their sensitiveness enough to prevent gagging, when irritated by the finger; and there is no special weakness; but if these same cases go on, perhaps for a day or two more, bromization may spring upon them in full force, without any warning, all, or many of the symptoms at once; and this is one of the risks we run in using the bromides.

A case very remarkable indeed, illustrative of this, has come under my notice lately. A lady, who had taken bromides as preventives of sea-sickness, felt no influence from the remedy, except that she was not sea-sick, as she had always been in her previous trips across the ocean. She took her meals as usual, and kept on with the large doses, which was both unnecessary and unwise, under the

circumstances, as there was no severe storm. After three or four days, however, she became very sleepy, and for three days slept almost continuously. When rallied, she was dull and stupid; her friends got her out on deck, but she could not continue her conversation, and preferred to go below, where she could sleep. She took no more of the bromide, but the effects remained, even after she landed and went to London, but gradually she returned to her normal condition. All this could have been avoided, should have been avoided, and would have been avoided, if the directions which I have given for the use of the bromides in sea-sickness had been carried out.

In the party to which this lady belonged there were two others who took the bromides as she did, for a few days, but they stopped before she did; a few doses absolutely prevented sea-sickness, although in all previous voyages one of them had suffered severely from dock to dock; and on landing they thought only of their voyage as a very delightful experience.

#### EARLY BROMIZATION.

This late appearing of the effect of the bromides, it is important to recognize, and for want of recognition of this, many fail of obtaining sleep by the use of this remedy. They order a dose of perhaps fifteen or twenty grains, or possibly even larger, to be taken at night, and wonder that they get no sleep therefrom. There are some who are bromized so quickly as to get benefit from taking it this way; but, as a law, it is far better, if we are to give but one dose, to give it earlier in the day; better still to give two doses, one in the morning, and the other at night. Failures beyond number in the use of the bromides would be prevented if this last fact were known. No one who knows how to use the bromides will question their hypnotic power.

## LATE BROMIZATION.

On the other hand, very interesting indeed are the instances where bromization is rapidly produced. In my own office a lady to whom I gave a large dose of bromide of potassium (100 grains) was bromized in less than twenty minutes, and in half an hour was unconscious, almost moribund; the feet and hands were cold, the pulse thready and rapid, and for two hours it was, or seemed to be, a fight for life, as though she were battling with the effects of some terrible poison, and for several days she was confined to her bed; but even in this case there were no permanently bad results.

When I was studying the Maine Jumpers, last year, I tried the experiment of thoroughly bromizing one of the subjects, in order to see if it would have any effect over the phenomena. I poured the drug down him in large and repeated doses, in order to get him rapidly under its influence. I knew that I was dealing with a strong, healthy man, one who probably would not be susceptible to large doses, and I did not know how much I gave him, but this I do know, that I would never give the same quantity to any one again, under any circumstances. He went rapidly under its influence, had difficulties both of speech and walking, was obliged to go to bed, and was kept in bed for a number of days, and at one time was thought by those who took care of him to be dying, or in danger of dying. He recovered, however, and was not at all benefited, as far as the jumping was concerned, either temporarily or permanently; a very interesting confirmation of the conclusion I then reached, that the phenomena of jumping were psychological (trancoidal) rather than physiological.

In another case where the bromides were taken for

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<sup>1</sup> *Popular Science Monthly*, Dec., 1880.

sea-sickness, temporary helplessness and blindness were produced. Dr. Reed, a young physician, of Hartford, Conn., is reported to have jumped overboard during an attack of insanity, which was apparently induced by taking eleven ounces of bromide of sodium. It is quite probable that this report is correct; I have seen many of the physical symptoms of general paresis produced by bromization. There is no question that cases of bromization are, now and then, mistaken for cases of insanity. It is both interesting and consoling to know that the recovery even from these severe symptoms of bromization is complete and satisfactory. Knowing this fact, I have in extreme cases of opium-eating bromized the patient profoundly for a few days.

It is almost inevitable that we ask how it is that the bromides produce such remarkable sedative effects on the nervous system. Attention was first directed to the bromides—as every one knows—by their action on the reproductive system; but a wider study and fuller experience in their use show us that they have the same action on the entire nervous system—from head to foot, on the general and special functions—the brain is bromized, the spine is bromized, and all the nerves that proceed from them are bromized; there is no evidence of any selective or partial action of these remedies on any organ, or any limited area of the body; the molecular movements that are correlated to the evolution and transmission of nerve force are lowered by this drug. Just as magnets have their magnetic power reduced by heat, just as metals when heated also become poorer conductors of electricity, just so the nerves when bromized become poorer transmitters of nerve force, and of any other irritation from outside. This I take to be the philosophy of the fact that the bromides are the most popular remedies in the entire pharmacopœia, in all nervous

diseases among nervous Americans—the class of all others who most need to have their nervous activity lowered instead of increased. This I take to be the philosophy of the fact that bromization is to sea-sickness what vaccination is to small-pox; preventing it almost absolutely, when it is thoroughly done and properly repeated. The study of sea-sickness, I may add, has been of great service in the study of bromization and its antidotes; but as long ago as the first edition of my work on “Sea-sickness,” I spoke in detail of these unpleasant effects of bromization.

*Fourthly.* The bromides, if used long or frequently on any patient, should be used in alternation or combination with tonics of some kind. In epilepsy this has been understood for some time, but it has not been understood that in the functional nerve diseases the same principle applies. Last year, in our discussion of this subject, it was denied that benefit could come from combining bromides and tonics. This injunction I regard as of very great importance. My own custom is to give bromides one week, and tonics the next, or to give the tonics during the day and bromides at night. Sometimes I include a tonic, as nux vomica, in the bromide prescription, and also ingluvin and arsenic in very small doses to act on the stomach. Bromization can be held, when once started, on land or sea, by simply one dose at night or every other night; meanwhile, before meals, tonics—as strychnine or quinine—can be given. I am fully persuaded we should not hear so much of the evil effects of bromides if these customs were pursued among physicians. There is no inconsistency in using a sedative and a tonic at the same time; and Dr. Gray, in his paper on this subject last year, was, so far as I understood him, right and verifiable all through. My claim is, then, on this point, of a two-fold character: first, that we get better therapeutic effects by combining or alternating bromides and

tonics; and, secondly, that we avoid the evil effects, that are almost sure to come, by following this plan. Even in epilepsy I adopt this plan with satisfaction. The bromides, used in the method I have described, make it possible to give the nervous system a vacation, which, perhaps, it may not have had before for years; a rest far superior to the rest in bed, even with all the adjuncts of electricity and massage; but if this vacation be continued, unbroken by tonics, the effect is the same as in keeping the muscles long disused; there is a long debility from which it may be hard to recover; and thus may come those effects which are constant advertisements of the evil effects of doctoring.

One of the best remedies to use against bromization—that is, to cut it short when it is going on to unpleasant symptoms—is powdered citrate of caffeine, in doses of three to five grains. I provide those who go to sea with this, to be used in case of bromization that may have been carried too far. This is not, I believe, generally known. In the hands of a physician strychnine is one of the best antidotes to bromization; but quinine is safer for the patient's home use. Dr. McBride tells me that he has used strychnine hypodermically for this purpose with satisfaction.

*Fifthly.* It is an advantage to use a number of the bromides in combination.

The following bromides are those which are most familiar, and which I use in combination:

Bromide of potassium, which contains 68 per cent. of bromine.

Bromide of calcium, which contains 80 per cent. of bromine.

Bromide of sodium, which contains 80 per cent. of bromine.

Bromide of ammonium, which contains 81 per cent. of bromine.

Bromide of lithium, which contains 92 per cent. of bromine.

To these may be added bromide of manganese, which contains 75 per cent. of bromine. I had some bromide of manganese manufactured for me by Messrs. Caswell, Hazard & Co., of this city, and used it for a time. I suggested its use on the theory suggested by Prof. Haines, of Chicago, that manganese might be somewhat of a tonic; whereas, the calcium and sodium and potassium and ammonium and lithium have a somewhat debilitating effect, when used in excess. I find, however, two objections to bromide of manganese; first, it causes a headache, even in quite small doses of a few grains. Secondly, its taste is somewhat bitter, so that, when added to a bromide combination, it gives a bitter taste to the whole, which is more or less unpleasant. I have not been able to satisfy myself, therefore, that it has, practically, any advantage over the other bromides of the class to which it belongs. All the other bromides I use in combination, and, as it seems to me, with advantage; that is, we seem to get better effects in some cases from this combination than from any one used alone. I admit that it is very difficult to prove this; I cannot prove it to any one who denies it or doubts it. But I form this judgment from observation of many persons who have used one of the bromides alone, and have not obtained the effects which they have from very much the same dose of this combination.

It will be observed that the bromide of potassium contains a smaller quantity of bromine than any other of the bromides; and this is the one that is most used. Whereas, the bromide of sodium contains 80 per cent., ammonium 81, while lithium has the largest proportion of all, 92 per cent.

For sensitive, delicate stomachs, and for sea-sickness, generally, bromide of sodium has these advantages, namely: that it is easier on the stomach, less irritating, and its taste is less disagreeable than the other bromides, and certainly less disagreeable than the bromide of potassium.

I always give these bromides largely diluted with water, one or two tumblers full, if the patient will take them. This dilution has a double advantage; first, it prevents the local irritating effect of the salt on the stomach; and, secondly, it helps to flush the system with water, a very desirable thing in very many of our nervous patients, who have, as one of the symptoms of their nervousness, thirstlessness, or lack of desire for fluids, and difficulty in receiving and assimilating them. For these same reasons, I like to give all, or many, of my remedies freely diluted.

In regard to the other bromides,—bromide of camphor, bromohydric acid, bromide of quinine, bromide of zinc, and bromide of iron,—I may say that I use all of them, more or less, and like them all. In treating persons who have been injured by the ordinary bromides, or who think they have, or who have taken them too long, or who are in danger of taking them too long, I find it an advantage—not only in epilepsy, but in epileptoidal states and neurasthenic states—to make a change in the form of bromide used, to substitute the bromide of zinc, a favorite remedy with me, either alone or in combination with other zincs, or with *nux vomica*, or the bromide of camphor, or bromohydric acid, in some cases, in pretty large doses. I have not made much use of the bromide of quinine, or the bromide of iron, for the reason given above, namely, that I use tonics in connection with the bromides, and so do not need these preparations. So far as I can see, large doses of many of the chief bromides will prevent unpleasant action of quinine on the head, nearly as well

as the bromohydric acid, of which so much has been written. If, for example, a patient takes a large dose—say 60 grains—at night, or every other night, and takes quinine during the day, he will not be near as likely to have the unpleasant head symptoms of quinine, as he would be, were the bromide not taken. I have seen some cases where the bromide of camphor, in small doses, had a very delightful action, and have seen many others where large doses could be taken without getting very much effect.

*Sixthly.* Some nervous patients who are not epileptic or even epileptoidal yet need to use the bromides frequently if not regularly, for a time, just as though they had epilepsy.

The bromides are to be used in such cases subject to the precautions above given.

There is such a thing as the habit of taking bromides.

The bromides are not narcotics, and there is not, usually, any great danger of acquiring the habit of taking them, as the habit of taking alcohol or opium is acquired. They, however, who get pleasant effects from them may take them too frequently, or too much of them, as they take too much of quinine, or may take them when it is not necessary, when they could just as well do without them. But the effect in these cases is not like that of chloral, or opium, or alcohol. There does not appear to be, in any cases that I have seen, that craving for the remedy, and certainly not an irresistible craving. It cannot be, however, too often repeated, or too widely known, that the bromides are sedatives rather than tonics, and that, over-used, they tend to depress rather than to strengthen; and that nervous persons, whatever special variety the nervousness may assume, who depend habitually upon taking the bromides, will be in time injured thereby, and will be likely to reach a point where they may be seriously harmed. *The*

*great secret of taking the bromides, just as in taking other remedies of power, is to know just when to stop taking them.* And there is no arithmetical rule to guide us. Each case is its own study. I am, however, convinced that there are quite a number of persons who are not exactly epileptic, and who do not have even epileptoid or epileptiform symptoms, but who may be said to be half way between neurasthenia and epilepsy, who need to be treated persistently by intervals, at least, with bromides, very much as epileptics must be treated, and with whom it will not answer to let up permanently, or for a very long time. The tonics, however, should be used in alternation or combination. In all such cases the effort must be to wean the patient from the bromides as soon as possible. This can be done not only by the use of tonics, but by the use of other sedatives, as hyosciamus, hyosciamia, scutellaria, conium electricity, and warm baths.

Considerable has been said, here and there, of the relation of the bromides to hyperæmias and anæmias. It has been said that they are good, when there is an excess of blood in the nerve centres, and bad, when there is a deficiency in the nerve centres. My own views in regard to this whole subject of congestions and anæmias of the brain and nervous system have been expressed so often, in my writings on neurasthenia<sup>1</sup> and elsewhere, that there is no occasion to repeat them here. It is sufficient to say that I look upon the nervous system as the primary factor in the philosophy of functional nervous diseases, of which neurasthenia is a type, and that disturbances in circulation are secondary. In other words, innervation precedes circulation, and attacks of local passive congestion in all parts of the body are frequent results.

I have no doubt that these attacks of passive congestion

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<sup>1</sup> Neurasthenia (Nervous Exhaustion): Its nature, symptoms, and treatment. American Nervousness: Its causes and consequences.

may take place even in persons who are very anæmic generally, and in whose bodies there is too little blood, or the blood is unevenly distributed; too much in the nerve centres and too little in the limbs. The bromides, by their action on the nerves, relieve these passive congestions; and this is one factor in explaining their action.

Hence is explained the fact, that even in general anæmia the bromides may be used, for a short time at least, with all the good effects that are obtained in hyperæmia.

One practical inference from the above analysis is clear—namely, that the bromides are not to be tossed off carelessly as a prescription to be taken any time, and for any time, and by any body; but are to be watched over at the outset of their use especially; and the physician should, if possible, have his hand on the helm all through the voyage. In all cases where it is practicable, I insist on seeing my patients or hearing from them when they take bromides.







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