

October, when the thumb showed nothing abnormal, except a very slight prominence at the ulnar side. Its motions were perfectly free, and the child was beginning to use it naturally, opposing its tip to the other fingers in grasping objects.

I am aware of no recorded case of non-union of fracture of so small a bone, and of very few in any part of the skeleton at so early a period of life as this one. Malgaigne merely mentions that he saw one in a girl of 3 years, the humerus being the bone affected; and Norris quotes in his tables the case of a boy aged 5, in whom union failed to occur after fracture of the leg.

ART. XII.—*Bromide of Potassium in the Treatment of Amblyopia Potatorum.* By CHARLES S. BULL, M.D., Ophthalmic Surgeon to Charity Hospital, Microscopist to the Manhattan Eye and Ear Hospital, N. Y.

It is well known that the treatment of amblyopia, occurring in persons addicted to strong drink, is by no means always successful, and this is particularly so in those cases where there is no pathological change visible with the ophthalmoscope in the optic nerve or retina. Many cases will get well if the habit of drinking be given up, and some tonic medicine be administered. Others, again, do not recover their failing vision even when these directions are complied with, but do improve, some gradually, others rapidly, when strychnia is administered hypodermically. There are, however, still other cases which do not improve under this treatment—and, in fact, the vision grows worse, either owing to the inertness of the drug in these cases, or else to the long postponement of its action. In these cases there are generally some other symptoms of chronic alcoholism, such as insomnia, obstinate dyspepsia, and muscular tremors; and here I have had some excellent results from the internal administration of the bromide of potassium. Of course, we all recognize the efficacy of strong doses of this drug in the treatment of the nervous phenomena occurring in alcoholism; and Galezowski, Macnamara, and Quaglino have proved its usefulness in amblyopia *ex abusu*. Though the treatment be somewhat empirical, yet the results obtained are too important to be ignored, and I have come to regard it as a very important adjuvant in the treatment of such cases. Quaglino has used the bromide of potassium in cases of amblyopia potatorum from the beginning of the malady, and has convinced himself that its action is more prompt and decisive than other remedies employed for this purpose, provided the dose be steadily increased, and carried up to toleration. When the dose is increased up to 160 or 200 grains daily, he thinks it exerts a depressing

action upon the brain and spinal cord, which is manifested by a sense of weight in the head, weakness of memory and intellect, approaching fatuity, and great tendency to coma. At the same time there is more or less difficulty in voluntary movements, so that the patient becomes lazy, and occasionally the gait becomes a stagger. These symptoms disappear when the dose is diminished or stopped. Quaglino commenced with 15 or 30 grains daily, dissolved in from 4 to 6 ounces of water, and divided into three doses; and this dose was increased by 15 grains daily until the patient complained of fatigue in the legs, excessive somnolence, some difficulty in speaking, and weakness of memory. These symptoms, I have found, usually occur when the dose has been increased to three drachms daily, though they may not appear till four or even five drachms have been administered. Quaglino states that after his patients had taken ζij or $\zeta iiss$ of the drug, what he calls the "nervous irritation" of the retina diminished, and the vision became clearer; and this was particularly so for objects situated at some distance. As the dose was increased, printed characters could be more easily discerned; and, finally, in cases which were not very grave, the patients could read and distinguish minute objects. He found that even in inveterate cases which had lasted some time, the malady was usually arrested, though there was not generally any increase in the acuity of vision. This was probably owing to a more or less complete atrophy of the optic nerve fibres from hypertrophy of the connective tissue of the nerve. My experience in these cases has been very nearly the same as that of Quaglino. I have usually commenced with moderate doses—say ten grains three times daily—and have increased each dose by five grains till the patient began to show some of the toxic effects. When this point is reached it is better to omit the drug entirely for a few days, and then recommence with a somewhat smaller dose than the highest one reached, and gradually diminish the daily amount until we can discontinue the use of the remedy altogether. Of course, the use of any alcoholic drink or of tobacco should be strictly forbidden; and, generally speaking, the patients follow the directions given them very faithfully.

I have not yet employed this method of treatment in all classes of cases of amblyopia *ex abusu*, but have confined it to those in which the ophthalmoscope shows no sign of any change in the optic nerve, other than a slight amount of congestion. But the more cases of alcoholic amblyopia I see, the less reliable does the vaunted strychnia appear, and in this article I take the opportunity of modifying a second time my statements in regard to the use of strychnia in affections of the optic nerve. I believe that in cases where an atrophic degeneration exists in the nerve structure, from whatever cause this may proceed, strychnia is by no means so sure a remedy as has been supposed, and that we should come to look upon it certainly as a remedy to be employed, but by no means one always to be relied on. I do not think it possible to classify these cases of amblyopia

ex abusu in such a manner as to be able to say exactly in what cases any particular form of treatment is indicated. Nor do I wish to be understood as making the same vaunt for bromide of potassium as a remedy in these cases, as has been made for strychnia. They are both indispensable, and should always be employed. I have not been able to satisfy myself of the effect produced on the central retinal vessels by the bromide of potassium, as claimed by Lewiski, and confirmed by Allbutt in two cases. The former says he recognized a perceptible narrowing of the calibre of the retinal vessels, but does not say whether in the arteries, or veins, or both. He describes observations made upon vessels in other regions, and shows that the bromide causes a narrowing of their calibre. He trephined the skull of a rabbit to which he had given the drug, and observed the vessels of the pia mater, which, he says, diminished perceptibly in size, and the membrane became quite pale. Now, if it be definitely settled that bromide of potassium really has the power to contract the arterial and venous capillaries of the cerebral membranes, it surely ought to produce the same effect upon the capillaries elsewhere in the body, and among others in the optic nerve. The capillaries being contracted, less blood would flow to the part, and it would become less rosy in hue, and perhaps take on a blanched appearance. Now this is the state of things to be looked for in the optic disks of patients who have been taking the drug, and it is just this point to which my attention has been particularly directed. I have examined every patient carefully to whom the drug had been administered, not only once but repeatedly at every visit, and in only two instances could I detect any perceptible diminution of the central vessels of the retina, or in the capillaries of the optic papillæ. The latter retained their normal, rosy hue throughout, even when the toxic effects had been produced. In the two cases in which I did see the change in the vessels, it appeared in both eyes, and lasted until the dose of the bromide was diminished.

The opportunity for studying the effects of the drug are constantly increasing, for I think that more cases of amblyopia *ex abusu* are seen every year than were observed the year before; and thus it is comparatively easy to corroborate or refute Lewiski's statement.

I have occasionally used the hydrate of chloral in combination with the bromide of potassium, but I do not think that there is any advantage gained in combining the two drugs.