

his work on this subject, has accumulated additional experience which he now lays before the profession (*Med. Times and Gaz.*, Dec. 16, 1876). He says: "I have had more than seven years' experience of the results of the subcutaneous injection of morphia, and I have seen more than eighty cases of these forms of nerve affection—some of them excessively bad cases—and in not more than three did this treatment prove a failure. That is to say, that subcutaneous injection of morphia invariably gave relief—in most instances complete relief—and that by means of this relief the patient was enabled to eat or drink with comfort, and by help of perchloride of iron, and in some cases by cod-liver oil, he was thus enabled to put on flesh rapidly, and to repair the waste of tissue under which he had been laboring. And here I would mention that a remedy which is most valuable as a restorative in these cases is the hypophosphite of soda. Indeed, I think it as good a mode of administering phosphorus as any other. But in hospital cases it is questionable whether it can be beneficially employed, for we all know that the present system of administering drugs in many of our hospitals is most objectionable and faulty. It must be confessed that we owe our knowledge of this drug and its valuable effects in great measure to the recommendation of Dr. C. B. Radcliffe, to whom indeed, I think, we may give all the credit of introducing the phosphorus into the medical treatment adopted by this country.

It is as a means of relieving the pain that I administer the morphia—not, as some have erroneously imagined, as a means alone of curing the disease; and while the patient is painless there must be, as I have already laid down, every attention paid to his feeding, his walking, his warmth, and his *ease of mind*; to this last above all, for, be assured, a patient whose mind is kept constantly in a condition of worry cannot be improved in bodily condition by any mode of treatment whatever.

Of course the salt I employ is that of the muriate of morphia dissolved in pure distilled water alone. Take five grains of this salt, and add to them a single drachm of water, then heat the mixture over a spirit lamp, and a perfect solution will form. This will, on cooling, in winter assume a rigidly solid condition, and in summer, save in very hot weather, will be unfitted for injection if cold. And here it is necessary to say that most muriate of morphia, as got from local chemists, is worthless. I have tried at many houses, where I have obtained other drugs in comparatively pure state, to obtain pure muriate of morphia, but in vain. It, when so obtained, was found to dissolve with excessive difficulty, to form a muddy instead of a perfectly clear liquid, and to leave a certain amount undissolved. Hence I have for years obtained the morphia I use from Messrs. Hopkins and Williams, of Cross-street, Hatton-garden, of whom, it is perhaps needless to say, I never obtained any but the very purest salt, which was readily and completely soluble in warm water.

With regard to injection, I may say that a further experience has borne out my remarks of four years

ago—viz., that it is of importance to make the injection as close to the seat of pain as possible. It would, of course, be utterly out of my power to attempt any explanation of this. Indeed, as far as physiology is concerned, the facts would appear to be against this view. But I simply say that my experience—and it is derived from many trials on my patients—points to this, that to allay pain most successfully by subcutaneous injection of morphia, we must, as a rule, inject as close to the seat of pain as possible. As a fact that likewise is opposed by some physiological reasoners, we may mention that the best treatment of acute bronchitis is the production of an irritation of the surface of the chest. This is well known by the medical man, but it cannot be explained by certain physiologists, who therefore suggest that counter-irritation in any other direction would be equally efficacious. But we know that it is not.

And as to needles. I have had considerable experience, having made many thousand punctures with their aid; and I have come to the conclusion that, as the instrument is made nowadays, in most cases it is utterly and entirely wrong. I will not say that the instrument-makers are to blame for this, but assuredly whoever first ordered the gigantic instruments considerably over two inches in length that are generally appended to a subcutaneous syringe case, made a grievous mistake, and, furthermore, committed an error which, in its results, falls on both the patient and the practitioner. On the former it tells by the production of occasional abscesses, which we know are produced sometimes if a needle is introduced to a depth of two inches into the skin; and also by the fact that the drug is not so rapidly absorbed, for any one with the smallest knowledge of microscopic anatomy is aware that the portion of the integument immediately beneath the "zone of indifferent tissue" is loaded with minute bloodvessels, while further in you have merely loose connective tissue, with, of course, larger vessels, but not anything like numerous vascular parts you have got above. Then, secondly, it tells against the physician, for, if he has many injections to perform, we may put down as a moderate allowance for breakage at least one needle in three weeks. And these two or three errors may be easily avoided by using a needle of not more than half an inch in length. My own needle barely measures three-eighths of an inch long, yet the last needle that I obtained I have used in at least seven hundred instances, and it yet shows no symptom of yielding; it is as firm as when it left the maker's hands. And here I must offer a piece of advice to the beginner. In the first place, you should always use silver wire for plugging your needles with when they are put in the case, and invariably employ plain steel needles—firstly, because they are less easily broken than gold; secondly, because they are finer in make; thirdly, because they retain their points exceedingly well, which gold does not; and fourthly, and most important, because they are driven in with one-fourth of the pressure that is required for a gold needle.