

the patient could move the joint freely without pain.

Dr. Marcet, of Westminster Hospital, has used it in the form of spray, in the treatment of phthisis; but I do not think he obtained any benefit from this line of practice.

It is an excellent application to indolent syphilitic sores; the best form is the aqueous solution (1 part to 20 parts).

In concluding, I have only now to remark, that I do not think it is at all advisable or necessary to use the very strong solutions that were formerly used, such as 1 part of acid to 5 of oil. I think, 1 part to 15 or 20 is quite strong enough for all purposes. While I was in England, I had frequent opportunities of witnessing its value in the treatment of compound fractures; there were many cases which looked perfectly hopeless to attempt to save the limb, more especially in compound fractures in the ankle joint, and yet they progressed favourably and ultimately made good recoveries; and I feel confident, had it not been for the use of carbolic acid, they would either have ended fatally, or, at the least, in amputation. As far as I am concerned, myself, I have implicit confidence in it, and in all cases of compound fractures that may fall to my lot, I purpose to employ it.

TRICHINA SPIRALIS:

A LECTURE DELIVERED AT THE COLLEGE OF PHYSICIANS AND SURGEONS, FEB. 20, 1869.

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GENTLEMEN.—The subject of Trichinosis, to which our attention will be directed to-day, is remarkably interesting in three points of view. First of all, it is a disease of extreme importance with regard to its possible frequency, the fatality which it sometimes manifests, and the ease with which, at any time, it may show itself in a community where it has been previously unknown; at the same time it is a preventable disease; and in the third place, it is especially interesting as an instance of a malady which has been discovered, so to speak, suddenly, within a comparatively short period, although undoubtedly it has existed unrecognized from time immemorial.

Trichinosis, as you are all now aware, is a disease produced by the infection of the muscular system by a minute parasite, which has received the name of *trichina spiralis*. The existence of *trichina spiralis* in the muscles of the human subject, has been known for over thirty-five years. As early as 1832,

little bodies were discovered in human muscle, which upon examination were found to consist of ovoid sacs, and a few years later it was found that each one of these sacs contained a minute round worm coiled spirally upon itself. The discovery was first made in the muscles of a hospital patient. In that case it was found that the trichinae were exceedingly numerous and scattered throughout the body, in the substance of the voluntary muscles. Since that time they have been noticed, in many instances, in persons who have died from accidental causes, from pneumonia, from phthisis, and various other affections: from diseases, in a word, which would appear to be entirely disconnected with the existence of the parasites; so that notwithstanding the great abundance of the parasites, medical men were forced to the conclusion that they exerted no deleterious influence whatever upon the subjects inhabited by them.

I have here a specimen, which I took myself from the human subject, some ten years ago. It is the rectus femoris muscle, and, like the other voluntary muscles in this case, it is full of these parasites. You will see here the regular appearance of the trichinae as they are usually seen, and as they were exclusively known previous to about the year 1855. Look at this muscle very carefully; you will find, just visible to the naked eye, minute ovoid bodies situated between the muscular fibres, having an opaque envelope and a transparent, but apparently dark-coloured, centre. On dissecting out these bodies with needles, it is found, as I have said, that they consist of an ovoid sac, and inside this sac the worm lies, spirally coiled up. This is the old encysted trichina, such as you see in this drawing.

Between the fibres of the muscle, and lying parallel with them, is the ovoid sac, somewhat pointed and yet slightly rounded at its two ends, and swollen in the middle, where the worm is coiled up. Now the trichina is coiled in such a manner inside the sac, as to make about two turns and a half upon itself. One extremity of the worm is blunt and rounded, the other is more pointed, and the two lie so near each other that half a turn more would bring them together. These bodies, although so minute, are yet visible to the naked eye on close examination in such specimens as this; because, as you readily find under the microscope, they are partly solidified by a calcareous deposit in the cavity of the sac. This deposit is of a gritty and almost crystalline texture, brittle, breaking upon firm pressure, and is composed, probably, of phosphate of lime, slowly deposited, so as to give to the extremities of the sac an opaque appearance and a very firm consistency.

This is the condition in which the trichina presented itself in all specimens brought to the observation of medical men, for some twenty-five years after its first discovery. They were cases of old, encysted trichinae. All that was known about them was that they were encysted, and that they did not exhibit any distinct sexual apparatus, and that they did not appear to produce any distinct symptoms by their presence in the human organism.

But between the years 1850 and 1860, certain experimenters in Germany undertook to examine the natural history of this parasite more closely. They did so by administering portions of muscle infected with it to the lower animals; and they found—especially Leuckart, who was the most successful in