

employed. But this drawback is counterbalanced by two conditions, firstly, the radio-activity produced by induction and inference. The radio-active inference is due to a quality of the gas emanation which renders radio-active all the tissues that are affected by it, and make them act as radio-active substances themselves.

Secondly, the fact that the emanation can cover and affect very large grounds and surfaces.

The radium salts can be put in solution either by employing the soluble salts, bromide of radium, for example, or by employing the insoluble salts, sulphate of radium.

These solutions have been perfectly closed by Mr. Jaboin, chemist, of the Radium Laboratory of Paris, since 1905—they can be injected in the tissues—they can be incorporated into pharmaceutical substances, as quinine, etc., and be ingested by the mouth. They can be included in muds called radiferous muds, or spread on large towels. These muds and towels can wrap and cover the whole of a member, the abdomen, or the entire body. They can also be prepared as artificial mineral radiferous waters, and baths can be given.

If these therapeutic processes had remained in the realms of pure speculation, I should certainly not have spoken of them; but they have been put into practice.

It has been demonstrated that an insoluble injection introduced into a tumor produces a permanent radio-activity in the tumor. I have used with success a paraffine vaseline substance containing radium to spread it under a rebellious cancer nodule of the breast, and in applying at the same time an apparatus outside I performed a cross-fire, which reduced the nodule. In many cases I have supplemented the external treatment of cancer by injections of radium inside the tumor.

For treating gonorrhœic arthritis, injections of insoluble radium have shown themselves very efficacious. Injected in the general system in cases of leukæmia, the red corpuscles of the blood have been found increased in number.

I will not insist upon this side of the question as it is a new one, but without any doubt it shows a great future.

In conclusion, I shall feel happy if I have succeeded in demonstrating, without undue exaggeration, that radium must be considered as an important weapon, worthy of full consideration; that it does not interfere with surgery or X-rays, but, on the contrary, that it can be most usefully associated with surgical and X-rays treatment, and can even act beneficially when these methods of treatment cannot be employed.