

agents in the tissues of the human body are far more perfectly understood than was the case a few years ago, although in many instances considerable further investigation is necessary for their more complete elucidation. They may be classified as follows, bearing in mind that many forms of treatment will produce changes belonging to more than one class:

1. Physiological.
2. Chemical.
3. Physical.
4. Psychic.

1. **Physiological.**—The best examples of purely physiological changes are provided by the reaction of living tissues to X-radiation and radium radiations. The association between these forms of radiation is discussed in Chapters XIII. and XIV., and a more full account given of the tissue changes induced. For the present purpose an example of purely physiological action may be quoted: If a malignant growth, such as a carcinoma, be subjected to suitable exposures of X-radiation, certain of the tumour cells will undergo various changes. These changes may be of a retrogressive or destructive character, resulting in the ultimate death of the cell, or may be of a stimulating nature, resulting in increased physiological activity of the cell and rapid cell-multiplication, and, where this stimulation is in excess of or unaccompanied by destructive action, in the rapid increase in size of the tumour as a whole.

These changes must, the present state of our knowledge, be considered as dependent upon some direct alteration induced in the vital activity of the living cell protoplasm. Possibly with increased research this group of changes may be included in the class next to be considered.