(3) *Metabolic* :—Where important changes take place in the tissue activities, both of the parts directly acted upon, and of the body in general, as the result of the mechanical effects, and of reflex activities set up.

The effects on the nervous system depend chiefly on the kind of massage used, and how it is applied. For example, direct stimulation of the nerve trunks may be obtained by friction, light percussion and slapping ; while the nerve centres are best excited by beating and vigorous backing, especially if applied to the region of the spine.

The sedative effect on the nervous system, on the other hand, may be obtained reflexly by light and gentle stroking, or by prolonged vigorous percussion, which tires out the nerve and finally blunts its sensibility.

Reflex effects are seen in all forms of massage, the most striking results being produced by very light stroking when applied to certain reflex areas. They are, a visible contraction of certain muscle fibres, and a powerful stimulation to the centres in the spinal cord. The part of the cord thus stimulated depends, of course, on the reflex area acted upon—for instance, friction over the epigastric region, stimulates the centres in the cord, from the fifth to the seventh dorsal segment, friction over the cremasteric, stimulates the first to third lumbar segment, while that over the plantar area stimulates the last two sacral segments. The effect on the muscular system is chiefly in increasing the amount of blood flowing through the muscles massaged.

Lander Brunton, from his experiments on animals, draws the following conclusions :—

(1) During massage of muscles, the flow of blood through them is increased.

(2) Immediately after the cessation of rubbing there is an accumulation of blood in the muscles which is rapidly followed by an increased flow of blood through the muscles, an increase from two and four times as great as the normal flow.

The effect of this increased flow of blood, is an increased amount of nutrition brought to the part, a greater amount of respiration in the tissues, and a quicker elimination and removal of the noxious products of metabolism. The muscle becomes larger, firmer, and its tonicity is improved. The circulation is also greatly influenced both locally and generally, by massage, the effects differing as in other tissues, with the modes of application and the parts massaged.

General massage of the body, like exercise, increases the rate and force of the heart beat, but differs from exercise in that it does not cause a general rise in the blood pressure. This is due to the fact