and that peculiar stimulus, which they require for vigorous action; also, that any agent which can exert a soothing, pacifying influence upon the circulations, does it by first furnishing to the above glands, those conditions requisite for, equal and uniform action.

Further: all tonics, stimulants, and anodynes, produce their effects, by furnishing to the brain and medulla spinalis, those wants or means that enable them to produce, through their afferent nerves, upon the muscular tunic of the vascular system, those three effects, known as tonciity, stimulation and calmness.

In the voluntary muscles, the will presides over the frequency and degree of their action, though the prior and posterior, or proximate and remote causes of action, are the same in both divisions of muscles. Spasms and cramps occur in the voluntary muscles (we may not perceive them, yet they may also occur in the involuntary muscles-we know of their occurring in the alimentary canal), occasioned by the provoking presence of a foreign body in the domain of the centripetal nerves of the nervous centres. The afferent or centripetal nerves are reporters to the mind, and the presiding spirit of the organism, of the states of the body, and the qualities of approaching things. If their information to these powers, enthroned in the capital of the kingdom, yes, in the royal Palace, are compatible with the best interests of their government, then peace and order reign; but if incompatible, then they put forth efforts, corresponding with the degree of encroachment, to remove them. The efferent nerves (those that go from the brain) are divided into two classes, voluntary and involuntary; whether the afferent nerves (those that go to the brain) have two such divisions, is not positively known, though it is probable they have. The five nerves of sense correspond to the voluntary division of the efferent nerves; while those nerves (if any) which go to nature, as it is sometimes called, correspond to the involuntary efferent nerves. If the nerves of sense are lacerated at certain points, it ocasions spasms at certain points of the voluntary muscles. Perhaps corresponding

effects follow simular injuries to the afferent nerves of the interior principle, called nature.

When spasm occurs, it must be explained in the same way as ordinary muscular action z although the will is forestalled, nevertheless the continuous action of the muscles is the effect of the continuous action of the nervous fluid upon the cells of the fibrillæ. S.

Phy. Med. Recorder.

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MOTIONS OF THE JOINTS.

Muscular exercise, when properly distributed among the muscles of locomotive action, is the basement of health, the pivot of long The wherefore, of this will be forthcomlife. ing. If any one will look at the skeleton of the human body, he will discover that it is composed of a large number of distinct bones, connected by their ends principally; also that their extremities are so moulded as to nicely fit each other; some with a socket and head, others in the shape of a hinge; others again combine the two, while some will be clustered and consolidated in such a manner as to become one bone for all practical purposes in motion. If he will examine the joints individually, he will find some capable of only one motion, others of two motions, others again of five motions. And, if he is careful in his examinations he will be able to anticipate the offices of the voluntary muscles.

The advantages flowing from muscular exercise are so valuable and certain, that it is obligatory upon the ministers of anatomy and physiology, to present every argument and inducement, so that *all* may be inclined to practice it. The anatomy and physiology of the locomotive apparatus of our being, must be thoroughly examined—the number of joints specified—their shape—their number of motions—the number of muscles to each joint the number for each motion, and their combined; also, their individual names. So that, when a motion is produced, whether of the head, jaw, finger, foot, or arm, the doer can promptly tell every agent in the process. By