the time-relations of application of the two stimuli competing against each other.

Again, if, while stimulation of the skin of the shoulder is evoking the scratch-reflex, the skin of the hind foot of the *same* side is stimulated, the scratching may be arrested. Stimulation of the skin of the hind foot by any of various stimuli that have the character of threatening the part with damage causes the leg to be flexed, drawing the foot up by steady maintained contraction of the flexors of the ankle, knee and hip. In this reaction the reflex arc is (under schematic provisions similar to those mentioned in regard to the scratch reflex schema)

(i.) the receptive neurone, noci-ceptive, from the foot to the spinal segment, (ii.) the motor neurone to the flexor muscle, *e.g.* of hip (a short intra-spinal neurone); a Schalt-zelle (v. Monakow) is probably existent between (i.) and (ii.) but omitted for simplicity. Here, therefore, there is an arc which embouches into the same final common path, FC. The motor neurone FC is a path common to it and to the scratch-reflex arc; both these arcs employ the same effector organ, namely, the knee-flexor, and employ it by the common medium of the final path FC. But though the channels for both reflexes embouch upon the same final common path, the excitatory flexor effect specific to each differs strikingly in the two cases. In the scratch-reflex the flexor effect is an intermittent effect; in the noci-ceptive flexion­reflex the flexor effect is steady and maintained. The accom­panying tracing shows the result of conflict between the two reflexes. The one reflex displaces the other at the common path. Compromise is not evident. The scratch-reflex is set aside by that of the noci-ceptive arc from the homonymous foot. The stimulation which previously sufficed to provoke the scratch-reflex is no longer effective, though it is continued all the time. But when the stimulation of the foot is discontinued the scratch-reflex returns. In that respect, although there is no enforced inactivity, there is an *interference* which is tantamount to, if not the same thing as, inhibition. Though there is no cessation of activity in the motor neurone, one form of activity that was being impressed upon it is cut short and another takes its place. A stimulation of the foot too weak to cause more than a minimal reflex will often suffice to completely interrupt, or cut short, or prevent onset of, the scratch-reflex.

The kernel of the interference between the homonymous flexion-reflex and the scratch-reflex is that both employ the same final common path FC to different effect—just as in the inter­ference between the crossed extension-reflex and the scratch-reflex. Evidently, the homonymous flexion-reflex and the crossed extension-reflex both use the same final common path FC. And they *use it to different effect.* The motor neurone to the flexor of the knee being taken as a representative of the final common path, the homonymous flexion-reflex inhibits it from discharging. Hence if, while the direct flexion-reflex is in progress, the crossed foot is stimulated, the reflex of the knee-flexor is inhibited. The crossed extension-reflex therefore inhibits not only the scratch-reflex, but also the homonymous flexion-reflex.

Further, in all these interferences between reflexes the direction taken by the inhibition is *reversible.* Thus, the scratch-reflex is not only liable to be inhibited by, but is itself able to inhibit either the homonymous flexion-reflex or the crossed extension-reflex; the homonymous flexion-reflex is not only capable of being inhibited by the crossed extension-reflex, but conversely in its turn can inhibit the crossed extension-reflex. These inter­ferences are therefore reversible in direction. Certain conditions determine which reflex among two or more competing ones shall obtain mastery over the final common path and thus obtain expression.

Therefore, in regard to the final common path FC, the reflexes that express themselves in it can be grouped into sets, namely, those which excite it in one way, those which excite it in another way, and those which inhibit it. The reflexes com­posing each of these sets stand in such relation to reflexes of the same set that they are with them “ allied reflexes.” But a reflex belonging to any one of these sets stands in such relation to a reflex belonging to one of the other sets that it is in regard to the latter an “ antagonistic ” reflex. This correlation of reflexes about the flexor neurone in the leg, so that some reflexes arc mutually allied and some are mutually antagonistic in regard to that neurone, may serve as a paradigm of the correlation of reflexes about every final common path, *e.g.* about every motor nerve to skeletal muscle.

As to the intimate nature of the mechanism which thus, by summation or by interference, gives co-ordination where neu­rones converge upon a common path, it is difficult to surmise. In the central nervous system of vertebrates, afferent neurones A and B in their convergence toward and impingement upon another neurone Z, towards which they conduct, do not make any lateral connexion directly one with the other—at least, there seems no clear evidence that they do. It seems, then, that the only structural link between A and B is neurone Z itself. Z itself should therefore be the field of coalition of A and B if they transmitii allied ” reflexes.

It was argued, from the morphology of the perikaryon, that it must form, in numerous cases, a nodal point in the conductive lines provided by the neurone. The work of Ramón-y-Cajal, van Gehuchten, v. Lenhossek and others, with the methods of Golgi and Ehrlich, establishes as a concept of the neurone in general that it is a conductive unit wherein a number of branches (dendrites) converge towards, meet and coalesce in a single out-going stem (axone). Through this tree-shaped structure the nervous impulses flow, like the water in a tree, from roots to stem. The conduction does not normally run in the reverse direction. The place of junction of the dendrites with one another and with the axone is commonly the perikaryon. This last is therefore a nodal point in the conductive system. But it is a nodal point of particular quality. It is not a nodal point where lines meet to cross one another, nor one where one line splits into many. It is a nodal point where conductive lines run together into one which is the continuation of them all. It is a reduction point in the system of lines. The perikaryon with its convergent dendrites is therefore just such a structure as spatial summation and immediate induction would demand.