

The point of distinction between Physiological and Pathological actions, cannot always be determined ; but when the deviation attains to a certain magnitude, then the distinction is sufficiently easy.

In the investigation of this subject, the student has, beside general observation, two modes of searching, one by vivisection in animals, the other by post mortem observation. In so complex a question as the functions of the fifth pair of nerves, a question not yet fully decided, we cannot fully, at one time grasp the whole subject. We shall confine ourselves to what seems the most practical. All nerves may become subject to two general influences apart from what is normal, one of which is Physiological, the other Pathological. In the first there is simply a physiological stimulus ; in the the other there is a pathological irritant.

For instance, food in the mouth causes a due supply of saliva ; this is the effect of a physiological stimulus ; but the presence of some obnoxious substance in the mouth, or an ulcerated gum causes an incessant flow of saliva ; this is due to a pathological irritant. Again some irritating dust finds entrance to the nostrils, the consequence is sneezing, and a flow of water, to expel, and wash away the objectionable material. But, should the foreign body be sufficiently irritating, or large, that it is not cast out ; then inflammatory action will follow. The former was physiological ; the latter is pathological. Again, take the eye ; a bit of dirt is lodged upon the cornea, its presence is sufficiently objectionable to lead to a more plentiful flow of water, and the dust is washed away. The whole was transient, and unattended with irritation ; on the other hand, a bit of steel is lodged upon the eye, no moisture can soften it nor remove it ; it remains, producing pain by its presence, and when the eye is moved, or made increasingly sensitive by light. Now, how palpable it is that the one was physiological, the other pathological,

But, it must not be forgotten that irritation of a nerve may be produced, speaking generally, in three different places, viz.:—At the nerve centres, at the priphery, or at some point along the trunk of the nerve. It is most important to remember this, inasmuch as the effects of the irritation may be equal in all cases, and possess no peculiarity by which it can be determined where the site of irritation resides.

Take the bladder, or rectum. The presence of morbid urine, or impacted fœces is attended with severe local irritation, but the physician cannot, consequently, conclude, whenever there is irritation of either of these parts, that there is some local cause, inasmuch as the irritation may be due to an abnormal state of the spinal cord, from whence the nerves are derived. The *galvanic battery* is impaired.