

Original Communications.

THE PHYSIOLOGY OF CONVULSIONS.

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GENTLEMEN,—There are few circumstances more trying to the physician than the management of a case of convulsions, especially to one who has just commenced his career of practice, armed as he may be by knowledge acquired from lectures and books but yet doubtful, through want of experience, of the practical application of the means which he has been taught to use. Regarding the suddenness of the call, the great anxiety of the friends, the frightful aspect of the patient and the apparent necessity of immediate action all conspire to disturb that equanimity of mind necessary for correct observation and sound judgment.

In studying the physiology of convulsions I have come to the conclusion that they result from an anæmic state of the nervous centres, produced by spasm of the vessels through irritation of the sympathetic nerves from local disturbance in some part of the organism, or from an insufficiency of blood in the vessels, as in case of excessive hemorrhage, and perhaps from an altered state of that fluid from the poison of the eruptive fevers or strychnine &c.

A spasm is either local or general; in the organs of the mind, producing irregular trains of thought, hysteric emotion, depraved irresistible appetites, or, unconsciousness; in the spinal cord producing general or local pains or spasms in the body; in the vascular system of the body producing the general chill which precedes a fever, or local anæmia as in cold hands and feet, and what nervous patients describe as dead fingers. These and many other conditions have their origin in spasms of the arterial system, shutting off the supply of blood to nervous centers or to parts of the body; they are all similar in nature and call for similar remedies. They sometimes replace each other and are beyond the control of the patients will. The irregular circulation in the organs of the mind produced from extrinsic causes is a subject well worthy the study of the theologian, the moralist, and members of the legal profession, whose mental philosophy studied from consciousness, seldom recognizes the groundwork of that science in physiology; hence it is that with the one the wrongdoer is wicked, and the other condemns him as a criminal. How few recognize that great essential "a sound mind in a sound body."

This is the explanation of the different views taken

of cases in our criminal courts by the Bench and the doctors. Let us continue, at the risk of being the subjects of derision, to testify where our conscience dictates, in the interests of mercy, and let the same understanding make us charitable toward all men. We are, however, seldom called to treat these cases until some unfortunate is ripe for the lunatic asylum or on trial for his life. We will now consider the nature and treatment of spasms affecting the bodily organs. The phenomenon of a chill is that a local or general irritation of the sympathetic causes spasm of the arterial coats and unstriped muscular fibres generally, shutting of the supply of blood to the skin, producing a sensation of coldness and cutis anærica. The heart beats violently to overcome the obstruction, paralysis soon follows the expenditure of nervous force, and the capillaries become distended with an overflow of blood which is the phenomenon of simple fever. Nature's object in this is to relieve a local congestion by withdrawing the blood to other parts of the body and thus equalizing the circulation. All parts of the body now start from equal conditions to tone up their vessels, if this process obtains equally throughout the body there is a continuous recovery, but if, on the other hand, the part primarily affected fails to keep pace with the rest of the body, after a certain time it is necessary to repeat the process, which probably is the cause of the periodicity of certain diseases, as in intermittent fever, periodical pains, or periodical drunkenness or insanity of any kind. In low fevers the chills are slight owing to the depressing or paralyzing influence of the poison, hence the dusky appearance of the skin, its sluggish circulation and the bluish and long-continued congestion remaining after the application of mustard plasters in typhoid fever, &c. The same condition in the nervous centres produces the sluggish comprehension and other nervous symptoms observed in fevers. Convulsions frequently follow or take the place of chills especially in children, a fact which proves their close relationship. Now what are the facts from which we can form a just conception of the nature of convulsions, and can we draw a comparison between them and chills? I think we can prove them to be identical. Let us observe closely the phenomenon of a convulsion: There is variableness of the temper, fretfulness, excitement, frequently the child sings just before it is attacked, and the joyous mother is suddenly transported into grief by the unexpected change. The face is observed to be alternately pale and flushed; or, irregular patches are seen as travelling spots of redness. The pupils alternately contract and dilate. There are frequent starts out of a restless