

its way through the lungs, and from its very scantiness, is capable of being aerated by means of the exchanges of gases still going on in the lungs, owing to the presence of residual air, during the temporary, partial or complete arrest of respiration. (Kuss). As a consequence, the quantity of blood reaching the nerve centres, though small, is at least partly oxygenated, and serves to revive the function of these centres, "imperfectly at first," but with momentary improvement.

The effect of this revival, on the vaso-motor centre, is to facilitate the dilatation of the arterioles, in which the pulmonary vessels share, permitting, ere long, the inrush of venous blood from the distended vena cava and portal system, and its transmission onwards through the heart and lungs.

This corresponds to the period of increase in respiratory function, in which the laborious efforts of a feeble mechanism have been mistaken for an "exaggerated impulse" from excited and overacting or "exploding" nerve centres.

Meanwhile, impure blood from the venous reservoirs, (finding an entrance through the now fairly dilated pulmonary vessels,) begins to fill the lungs in such quantity, (as it is drawn onwards by an inequality of pressure, towards the as yet unfilled arteries) that the whole mass of blood, failing to be arterialized with sufficient rapidity, again becomes unfit for the maintenance of nerve-function and the perpetuation of processes depending upon it.

In such a case, a previously weak organ or centre, is the first to suffer. The medulla oblongata is such an organ in this case, and its contiguous centres for respiration and circulation fail together. Bad blood and deficient blood, acting on centres previously paretic, or enfeebled, have done their work, and again the respiration is suspended. The vaso motor centre is again so functionally weakened that it loses control of the arterial muscle—the "inherent contractile force," which all physiologists assign to muscular tissue, thus freed (as in the examples enumerated above), induces "the strong arterial contraction" referred to by Dr. Sanson, which contraction of the artery is all the stronger the nearer nerve force is to cease in the extinction of life.

This arterial, or systemic contraction, again empties the lungs, and refills the venous reser-

voirs, from which the blood is again drawn, at first slowly and then more rapidly, as the process repeats itself.

Here then, is an explanation of the Cheyne-Stokes' respiration, based upon sound—though as yet unacknowledged—physiological principles, according to which paretic and enfeebled nerve centres are helped by their appropriate pabulum—oxygenated blood—and are overwhelmed and have their function suspended by what is naturally calculated to poison and paralyze them,—impure, venous blood, deficient in oxygen and loaded with carbonic acid. As a proof, if such be needed, that carbonic acid is a poison and not a stimulant, it may be mentioned on the authority of Periera, that the inhalation of this agent produces spasm of the glottis, and this, we have seen above, is undoubtedly due, not to nerve stimulation, but to nerve paralysis.

How such an agent could ever be regarded as playing the part of a stimulant, can only be accounted for on the exigency of an erroneous theory, which demanded its modicum of nerve force from nerve centres actually being paralyzed.

All of which is respectfully submitted to the judgment of the candid reader.

Correspondence.

To the Editor of the CANADA LANCET

SIR,—Not with an idea of imparting anything striking or probably new even to many of your readers, but rather with the hope of having some further light thrown on the subject, I make mention of the following cases.

In this section of the country I have met with no less than five cases of peritonitis in the past month; in fact there may be said to be an endemic, as I have since learned from a brother practitioner that in their town they had met with nearly a dozen cases in the same length of time. These cases, which were nearly all fatal, presented all the ordinary symptoms of peritonitis, but the peculiarities were three-fold.

1. There was no apparent cause for the trouble, as all the patients, up to the moment of being seized with violent abdominal pains and in most cases vomiting, were apparently in the enjoyment of good health. The seizure was very acute and