

circulation of the blood are closely correlated in their causes. Now since certain conditions are requisite for the formation of the normal or perfect sound, I shall henceforth use the term "degeneration" to express any imperfection that depends upon the absence of one or more of these conditions.

I must here call attention to a very inaccurate expression commonly used by medical authors. Speaking of murmurs in the heart, they say "there was a *bruit de soufflet* with the first sound," or "*with* the second sound," as the case may be. Obviously this arises out of the false conclusion that the normal sounds have their origin in something different from that which produces murmurs. But, if that be the case, a sound emanating from anything but the blood itself, be it muscle or valve, would invariably be heard coincidentally with a murmur, which is an admitted blood-sound, except when the murmur is loud enough to drown the normal sound—a rare occurrence. When the subject is thus approached, an incongruity is perceived, and, to elude this, a phrase, not based on the candour which science demands, is employed; for the normal sounds are not generally accompanied by, but substituted by, murmurs.

From the rarity of disease at the right side of the heart, practically, the pathology of its left side alone concerns us. But if, while we listen to an uncomplicated murmur either at base or apex at this side, the stethoscope be slightly shifted to the right, the faint normal sound of the right heart may be generally heard coincidentally with the murmur from the left. In fairly considering this subject, therefore, the duplicate origin of the sounds must be kept in view; nor, indeed, is the possibility of the formation of an imperfect normal sound synchronously with a murmur, and both at the left side, denied. What is objected to is, the general instead of the exceptional employment of a mode of expression by which erroneous theories are sought to be propped.

But besides degeneration into murmur, the first sound is especially liable to alterations in intensity, duration, and pitch. These changes cannot be so well accounted for by any explanation of its cause as by the present. They are due to variations in the force with which the blood is impelled, or else in its pressure or visciduity, according to which the production of murmur is approached or receded from. By no other means can the complete degeneration of the sound into a murmur of moderate loudness be satisfactorily explained. Nor do the exceptional cases mentioned affect the statement at first made, that it is no less wrongly than constantly said, "there was a murmur *with*," when it ought to be *instead* of, the first sound.

(To be concluded.)

ON DIAGNOSIS, IN THE FEMALE, BY THE HAND INTRODUCED INTO THE RECTUM.

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IN a recent number of THE LANCET I suggested, as a means of determining the precise seat and nature of obstruction high up in the rectum, the introduction of the hand, obstetric fashion, into that viscus; and related a case in which the examination so conducted in a female nearly seventy years of age led to an accurate diagnosis, and was immediately followed by colotomy, performed to relieve complete intestinal obstruction. That patient now, six months from the date of operation, is in fair health.

A few days since my colleague, Dr. Head, requested my opinion in the case of a young woman with atresia vaginæ. With this exception the external signs of her sex were sufficiently developed. We were anxious to determine the presence or absence of a uterus, as well as the possibility of reaching that organ by means of an artificial vagina. The finger in the rectum enabled us to detect the left ovary lying low down in the pelvis, and on a higher level than this the digit just reached a firm body to the right of the mesian line, which might possibly be the cervix uteri. It was determined to cut for this in the natural site of the vagina. Having made an incision in the mesian line between the fourchette and the meatus urinarius (where was a depression), I tunneled my way with my forefingers upwards in the direction of the supposed os uteri. A passage thus made, the length of my finger allowed me to feel something, but still at a distance

from the point of the finger, and not in the mesian line. I was unwilling to cut further. At this stage Dr. Head suggested that I should resort to the mode of examination which he had heard I had adopted, and as is above mentioned. I accordingly (the back of the fingers and hand being well oiled) introduced the hand into the rectum, and was enabled to determine the absence of the uterus, but the presence of the right ovary, and it was this organ which we had suspected might possibly have been the cervix uteri. With the left hand in the rectum, and the right upon the anterior abdominal wall, I was enabled to explore the pelvis with facility.

In cases in which it is of vast importance to determine with accuracy, as it certainly was here (question of marriageability), the state of the pelvic organs, whether in reference to congenital malformation or to morbid growths (tumours &c.), the hand introduced will avail much.

Should the sphincter be ruptured, as it was slightly in the above case, incontinence of fæces for a short time is a matter of little moment when compared with the great importance, in certain instances, of arriving at a positive diagnosis.

Note.—The patient being thoroughly under the influence of chloroform, the hand should be introduced with the backs of the fingers and the knuckles towards the hollow of the sacrum, up which it will glide as soon as the knuckles have passed the sphincter, either by dilating or rupturing it.

ON THE FUNCTION OF THE GANGLIONIC SYSTEM IN RELATION TO THE OPERA- TIONS OF MIND.

By METCALFE JOHNSON, Esq., M.R.C.S.E.

OBSERVATION of the effects of organs, such as the liver, uterus, &c. (under the influence of the ganglionic nerves), in conditions of disease, upon the mental operations, shows us that mind is not solely the result of the cerebro-spinal system in the performance of its duties, but the consequence of the combined efforts of both systems.

The frequent insanity of persons of depraved habits of the sexual organs, the depressed spirits or hypochondriasis of hepatic disorders, the vomiting of cerebral disease, the diuresis of mental excitement, the diaphoresis of fear, as well as the lachrymosis of grief, point to the conclusion that the ganglionic and cerebro-spinal functions are so inseparably connected that we may safely infer that mental operations result from the combined efforts of the whole nervous system, ganglionic as well as cerebral—in fact, that *corpus sanum* is the *propter hoc* of *mens sana*.

The enantia (*εναρτιον*) of mind are instinct and experience, or sense, just as ozone and antozone are the enantia composing oxygen. It may be said that instinct is common to the whole animal kingdom, while sense is proper to the vertebrata. True, attempts have been made to show a cerebrum in some of the invertebrate animals; but if we allow the performances of the insect world to result from experience, we shall conclude, after the experiments of Maraldi and Koenig, that the bee is possessed of the highest mental organism of all created nature; for where is there in the most civilised states one which evinces such perfection of social, sanatory, and constructive laws?

The instincts proper to the whole animal kingdom are two, gastric and genital; the former to serve for the maintenance of the animal; the latter for its perpetuation. The senses, commonly called five, are in reality but modifications of the one function of sensation. That the instincts are the *propter hoc* of ganglionic, and sense of cerebro-spinal systems will be seen in the sequel. The coincidence of instinct and sense, invertebrate and vertebrate, is, at least, remarkable.

From the tree to man we find a gradual transition of nervous function, only remarking the hiatus between Mollusca and Pisces, which has as yet never been spanned. The tree is insensible to external touch. The sensitive plant (first homologue of sensation) presents a remarkable peculiarity. Chara, Diatoms, Paramæcium, Volvox, and Vorticella (first homologue of reflex motion) show progressive stages of the function. Beroë pileus (first distinct ganglia) and the diploneurose system in