ceased and in less than a month the patient was discharged well, and she still remains so, although there is no sensibility in the greater part of the scalp on the affected side of the head.

This is one of those extraordinary cases to which one scarcely knows what to say. The end may be considered as consecrating the means, success as stamping the character of the treatment. Suppose, however, that from such an operation as was here attempted, matter were to form upon the dura mater and occasion the patient's death, what would the opinion of the world be then? And suppose that this operation, severe as it was, and fraught with danger as it might have been, had proved unsuccessful and inoperative;—what might be the criticisms of the harsh and the illiberal? Mr. Brodie mentions a case in which a surgeon performed some such an operation on the scalp for a similar disease; the patient died in consequence of the formation of matter on the dura mater and secondary deposits. Another consideration is this, that nervous pains do occasionally subside without the assistance of art, certainly without that of surgery, and not infrequently resist the most scientific as well as the most severe operations.

Looking at the present case from every point of view, and impartially considering the practice, we cannot avow that we think it safe, or that we should feel inclined to adopt it. Still this must be looked on as merely an opinion, and Mr. Fletcher has on his side of the question, an argument of no mean value, the fortunate issue of the experiment.

XIV.

CHRONIC ABSCESS OF THE CHEEK, FROM THE IRRITATION OF A CARIOUS TOOTH.*

THE swelling from this cause, which

* Mr. Fletcher's Medico-Chirurgical Illustrations.

often simulates a distinct tumour, is of a pale and purplish tint, little elevated, giving something of the appearance of a strumous abscess, though it feels firmer, and the skin looks thicker. Mr. Fletcher has known this swelling cut out from the cheek as a tumour otherwise irremovable; he has also known it opened, treated with caustic, and in fact in all sorts of ways but the right. On removing the carious tooth, with its fang or fangs, the cause of the disease, the tumour gradually disappears without further treatment. On opening the tumour we find a small quantity of unhealthy pus, mixed sometimes with a slight fungous growth, and the fangs of the tooth will have attached to them a small fungous growth of similar character. Mr. F. has never seen this chronic tumour opposite to any other teeth than the first molars of the lower jaw. The history of the disease appears to be this. The carious fang excites some inflammation in the socket, which generally suppurates, when the pressure of the matter induces the ulcerative process outwardly, for its escape. During this process the contiguous portion of the cheek sympathises slowly with the irritation, inflames, and gives rise to the chronic abscess in question. The effect on the cheek may take place from the irritation of the diseased tooth, before the inflammation in the socket has advanced to suppuration; or this last may not even happen at all.

XV.

ON THE INDICATIONS OF THE PULSE. By Dr. BURNE.

IN our contemporary of the Midland counties, for May last, Dr. Burne of Spring Gardens, has published some physiological observations on the motions and structure of the heart, which had been read at the Physical Society of Guy's Hospital, three years ago, and now sent forth on account of the discussions which are afloat respecting the motions and sounds of the heart. We

apprehend that these discussions have led to no conclusive result, much less to any useful purpose. We shall therefore pass over the physiological portion of this paper, and give our readers the practical part with which the communication winds up.

INDICATIONS OF THE PULSE.

"The character of the pulse depends on three circumstances, namely, the volume of blood sent forth by the left ventricle at each contraction of the heart; the force with which that blood is propelled; and the degree of tonicity of the artery. These causes, together with the frequency of the heart's action, give rise to all the varieties of the pulse. The character of the pulse is, moreover, modified by the state of the skin, according as its temperature is high or low, or as it is dry and contracted, or relaxed and perspirable.

The volume of blood sent forth by the ventricle at each contraction, is necessarily regulated by many circumstances: as by the supply of blood which that ventricle receives, and by the area of the mouth of the aorta, &c. The supply of blood may be abundant, from a general fulness of the system, and activity of the circulation; or scanty, from an opposite state of things. The supply may also be deficient, from a diseased condition of the lungs opposing the transmission of blood from the right to the left side of the heart, or from a narrowing of the auriculo-ventricular opening. The area of the mouth of the aorta may be diminished by disease of its valves, or increased by dilatation. All these different circumstances influence the character of the pulse, and the pulse, therefore, becomes an indicative sign.

Notwithstanding the pulse is mainly produced by the action of the heart, it does not always correspond with that action. The action of the heart will sometimes be impetuous and strong, while the pulse is small and weak; as in a narrowing of the orifice of the mitral valve from cartilaginous or osseous deposit.

The various characters of the pulse may be represented by the following

designations. It may be strong, weak, hard, soft, wiry, sharp, harsh, grating, jarring, vibrating, falling back, fleeting; or full, large, small, thready; or yielding, open, contracted, tight; or rapid, frequent, accelerated, slow; or it may be quick, free, equal, unequal, regular, irregular, hesitating, labouring, intermittent, fluttering.

Each of these terms designates some notable peculiarity of the pulse; and as they are numerous, and as most of them cannot be measured except by the sensation produced in the mind, it follows that the accuracy of this measurement must depend on the skill of individuals, and hence the difficulty of an acquaintance with the science of the pulse. But although the task is difficult, it may be accomplished by diligence and perseverance. The ready use of the stethoscope, requires the ear to be educated; and an education of the touch is necessary to a correct judgment of the pulse.

If time can be profitably spent in acquiring a knowledge of mediate auscultation, much more may it be so spent in acquiring a knowledge of the pulse; because the pulse is one of the most prominent signs in disease, and one of the most certain indications in the treatment. Without the assistance of the pulse, we cannot advantageously, or even safely, employ blood-letting, which is the most powerful of all our remedial agents, the most beneficial when judiciously prescribed, the most fatal when prescribed in error.

The characters of the pulse are produced by three causes; the heart, the volume of blood, and the artery; and as these causes always operate, it follows that every given pulse must have several characters. Thus, the same pulse may be strong, full, and firm; the strength resulting from the heart, the fulness from the volume of blood, and the firmness from the tonicity of the artery.

Of the terms already specified, some belong to the heart, some to the volume of blood, some to the artery, and some to these causes combined.

Those which depend upon the heart, are *strong, weak, sharp, jarring, rapid, frequent or accelerated, unfrequent,*

quick, slow, equal, unequal, regular, irregular, hesitating, labouring, intermittent, fluttering.

Those which depend upon the volume of blood, are *full* and *small*.

Those which depend upon the artery, are, *contracted, tight, yielding, open, harsh, grating.*

Those which depend upon the above causes combined, are *hard, soft, wiry, vibrating, falling back, fleeting, thready, large, compressible.*

The pulse, in health, beats about 72 strokes in the minute, or thereabout, and the number varies a little in the course of the day and night, being rather more than 72 in the evening, and less than 72 before rising in the morning. Its natural character is *equal, regular, soft*, and of *moderate strength and volume*.

In the deviations from health, the pulse varies in character according as the nervous or sanguiferous systems are prominently affected, or as both are affected simultaneously; and it is this difference which gives rise to that peculiarity of pulse, which surgeons meet with so frequently after the shock of an accident or operation, and which is known by the term *irritable pulse*, or *pulse of irritation*. This pulse derives its peculiarity from the excitement of the nervous system; and its character may be described as follows: it is frequent, the stroke is quick, short, rather sharp, but not strong, the impression on the finger being rather smart but not lasting. Its volume may be small or otherwise, but is never full.

There are many diseases and conditions of the body which are accompanied by a particular kind of pulse, and in some of which the peculiar pulse is in part diagnostic. As, for example, the pulse accompanying pneumonia, pleurisy, apoplexy, and depression of the scull from fracture; concussion of the brain, adhesion of the pericardium, valvular disease of the heart, and that succeeding sudden hæmorrhage, and therefore called the hæmorrhagic pulse. This last is of so much importance, as to deserve our best attention: for the efforts of the heart to keep up the circulation, after sudden and copious hæmorrhage,

give a character to the pulse, which is apt to be regarded as indicative of increased power, and so to lead to error in practice.

The hæmorrhagic pulse is frequent and open, and the stroke is quick and rather smart, but short and falling back, and leaves but a slight impression on the finger. This open character is sometimes mistaken for a full pulse, and the quick and rather smart stroke construed into strength, which may tempt a practitioner to abstract blood, while the symptoms are already produced by the loss of blood: but the slight impression upon the finger, and the sensation of falling back after every stroke, will at once determine that there is a deficiency of strength and volume of blood.

The pulse of an intense pneumonia, is the best example which can be furnished of a full pulse, the very nature of the disease causing, in the early stage, a very abundant supply of blood to the left ventricle.

Pleurisy offers an example of a firm pulse; so also do some cases of concussion of the brain, during the succeeding inflammatory stage.

The adhesion of the pericardium is attended with so peculiar a pulse, as to be a diagnostic sign. It is generally said that there are no signs by which the adhesion of the pericardium can be detected; and this is true to a certain extent. It is true, for instance, where the adhesion is by the medium of a rare and loose cellular tissue which allows the free motion of the heart; then there are no signs, because the action of this organ is not interfered with; but where the adhesion is firm and close, it so impedes the action of the heart, as to give a decided character to the pulse. The pulse, under these circumstances, is frequent; the stroke is unpleasantly sharp; is quick and strong more or less, and more or less full.

In ascertaining the nature of the pulse, we must be circumspect, and take care that we are not led into error by any accident or idiosyncrasy: for instance, any inflammation of the finger, or rheumatism of the wrist, will affect the pulse of the affected arm; or if one

arm has been lying out of bed, while the other has been covered, the pulse in the two arms will differ exceedingly; or there may be a naturally vigorous stroke of the heart, which is usually attended with a thick strong artery, and so on.

The characters of the pulse which I have attempted to draw, will, I am afraid, be regarded by some as unnecessarily minute; and they may appear difficult to become acquainted with; but they will easily be made familiar by patience and industry; and the satisfactory, and, I may add, practical information, which I have gleaned, in proportion as I have devoted time and attention to the contemplation of the characters of the pulse, urge me to recommend the study of its indications, as leading to the acquisition of valuable knowledge."

XVI.

ON THE CAUSE OF DEATH IN MEMBRANOUS INFLAMMATIONS. By M. BROUSSAIS.

THE following are the conclusions to which the eccentric, but talented, Professor of Val de Grace has come on the above topic.

1. The membranous phlegmasiæ, more especially those of the abdomen, particularly gastritis and enteritis, frequently determine, even at their commencement, congestion in the brain and spinal marrow, sufficient to destroy life, if proper means be not promptly employed. This congestion often, as, for example, in infants, becomes the principal disease.

2. During the course of these inflammations, there exists *always* a sympathetic irritation of the brain and spinal marrow, which more or less accelerates the circulation and respiration, disturbs the sensorial functions, perverts the sensations, renders the voluntary muscles unfit for their offices, and, in a word, occasions all those nervous symptoms which we see in this class of diseases, even when they are most mild.

3. When these phlegmasiæ have pro-

foundly altered the mucous membranes, and menace a fatal termination, very severe nervous symptoms are developed, such as delirium and convulsions, when the membranes of the brain are the chief seat of the sympathetic irritation—or coma, when the central parts of the cerebral mass are affected, and exhalation takes place into the cavities of the brain.

4. It is this irritation which always leaves traces of inflammatory action, that terminates life, *by functional disturbance*, whenever death occurs before encephalic effusion, hæmorrhage, or organic change in the great vital organs. It may be asserted that peritonitis, even where there is perforation of the gut, does not, in itself, occasion death, but only through the constitutional disturbance of the brain and nervous system, as before stated.

5. Finally, M. Broussais concludes that those alterations of structure which we see in acute diseases, hitherto called idiopathic fevers, are the effects of inflammation—and if, in certain parts of the said membrane, there be appearances of paleness, or even atrophy, these he attributes to the afflux of blood to various other parts of the body in articulo mortis, or during the last day or two of life.—*Annales de la Médecine.*

XVII.

ON SPINNER'S PHTHISIS. By Dr. KAY, of Manchester.

Dr. KAY has written a long and important article "on molecular irritation of the lungs, as one cause of tubercular consumption," in the third Number of the North of England Journal, from which we shall make a few extracts. A considerable portion of it is occupied with observations and criticisms on the writings of Velpeau, Broussais, Alison, Andral, Baron, and others; together with personal experiments on the introduction of mercury into the lungs—experiments quoted in Dr. Alison's work, they having been made while Dr. Kay was an "*interne*" in the Royal Infirmary of Edinburgh. But these critiques