Martyrs furnishes many examples of a similar kind. A like condition obtains among the heathen and savages who use self-torture as a propitiatory exercise. There is a state of anæsthesia resulting from extreme peril, in some instances, of which Dr. Livingstone's account of his sensations while in the jaws of a lion is an instance. But war furnishes, on a large scale, the best examples of endurance and disregard of suffering.

The emotions developed during a battle are various. In a few constitutionally timid natures, they are of the most distressing character. Fear is imprinted on every feature, and every limb is a tell-tale. The term *demoralized* is strictly and scientifically applicable to such cases. In one instance under my own observation, an attack of mania was induced. A soldier, under unexpected fire for the first time, suddenly clubbed his musket and struck out furiously among his comrades, yelling all the while as if in the midst of the enemy. On being led out of the fight, the delirium subsided, leaving a condition of stupor which lasted several hours. He subsequently became a good soldier. In the same fight a young man became so exhilarated as to offer to stand guard all night, on account of his sleeplessness, the rest of the regiment being completely exhausted. He has since died of apoplexy.

In the mass, the excitement does not exceed the limits of self-control, but serves to keep each man up to his duty, and makes all more or less careless of danger, and indifferent to ordinary wounds. This is especially the case if the fight goes well. For instance, a soldier lies in an ambulance, with a bullet among the bones of the tarsus, shouting, "Dig away, Doctor, and damn the pain! we've licked 'em!" Or a delicate drummer boy, with a large flap of integument torn from his knee, requiring tedious dressing and many stitches, asks meanwhile for a pencil, to make notes in his diary of the occurrence! On the other hand, a fellow, with all the signs of cowardice, comes up with the right fore-finger shot off, and an empty gun-barrel. A self-inflicted wound is diagnosed, and amputation at the joint proceeds, amid contortions and frantic exclamations of pain, while all around lie the severely wounded, with scarce a groan among them.

Such strong contrasts illustrate forcibly the influence of mental conditions upon sensibility to pain. It is a common error to enlarge the sphere of consciousness beyond its true limits. Consciousness and cerebral activity are by no means co-extensive. Not

only do organic processes and automatic actions go on unperceived, but unconscious trains of associated thought occupy the mind largely, awake as well as asleep. A certain degree of intensity in a nervous impulse seems necessary to a sense of consciousness, though of the laws which govern this matter we know little, and have slight control. Ideas and sensations rise into consciousness apparently at random, when not evoked by a direct effort of the will, or forced on the mind by their intensity. Pain is a sensation which in ordinary states has an element of intensity sufficient to excite the attention powerfully, but in abnormal conditions the brain seems under the absorbing control of centric agencies. Whatever these agencies are, whether changes in the circulation, or the cell nutrition, or the nervous currents, the results resemble, to some extent, artificial anæsthesia. Nature, however, more skilful than man, applies her anæsthetics so delicately as to produce more exact localizations of effect.

In the more permanent anæsthesia of insanity, we look for more visible and lasting changes of structure, such as atrophy of the nervous elements, abnormal growth of the connective tissue, or varicosity of the capillaries.

The subject, so hastily sketched, presents a field for more careful observation, and its phenomena should be fruitful of something besides incredulity or surprise.

A COMBINED WIRE SPECULUM AND RETRACTOR.

By FRANCIS H. BROWN, M.D., Boston.

A few weeks ago, I was asked by Dr. Waterman to assist him in a vaginal operation, which required the passage to be fully shown, and which promised to be, and, indeed, was quite protracted in its performance. I took occasion to suggest employing a simple wire speculum, which would answer the additional purpose of a retractor, in place of the Sims and Boston (Storer) specula and the copper spatulæ he was proposing to use. He carried out my idea by bending a stout wire on itself, and then shaping both folds nearly into the form of the letter S; and thus got a very excellent and serviceable instrument.* Afterward I made, more carefully and after some experi-

* For sundry suggestions regarding this retractor, I am indebted to Dr. Waterman, and a considerable part of the merit of the instrument—if merit exists—is due to that gentleman.

ments, the two forms of the instrument which I now describe.*

They are made of iron wire, joined by hard solder and then nickelized; the larger the size of a No. — catheter (French), the other of No. —. The general description of the larger instrument would be that it is a *skeleton* Sims's speculum; very nearly of the same size, and with the same curves; the two handles turning in opposite, instead of the same direction; and one blade somewhat shorter and narrower than the other. The instrument made from the smaller wire is, generally, smaller, and has one of its ends, proportionally, shorter; otherwise its general shape is the same.

The objects for which I propose these instruments, are the following:—Singly, the larger instrument has been found well adapted to take the place of Sims's speculum. It displays the vagina equally well; it is much lighter; equally strong; and no less easy of application. The two together, as retractors or in place of the copper spatulæ, have served well to dilate the vagina, and bring into view every part of its wall, up to the cervix. Of course, this use presupposes one or more assistants; but, when

so employed and guided by the eye of competent helpers, they fill, more satisfactorily than the bivalve and multivalve specula,

* In photographing from the instrument to the block, it was necessary to turn the retractor on its long axis, in order to show its fenestrated character; as a consequence, the electograph shows less curvature in the handle or upright portion than actually exists; in fact, it very closely resembles the same part in the Sims's speculum.

the place of these instruments, while they are more fully out of the way of the operator. They have, moreover, the additional advantage over the common copper spatulæ, that they have no sharp edges.

Singly the instrument may, not infrequently, be used to hold and render tense the vagina, and, by its fenestrum, bring into clear view and make prominent an abscess or small tumor, an ulcer or fistula, on which one desires to operate, much as the fingers of the operator or assistant would do on the external surface of the body. It may, not inaptly, be employed after rupture of the sphincter ani for the display and operations on internal hæmorrhoids and ulcers of the rectum, or the internal opening of a fistula in ano. The retractor will be found a useful aid in searching, by means of its fenestrum, for vesico-vaginal fistulæ—which, as is known, sometimes baffle the search of the surgeon for a considerable time.

The smaller instruments are to be used especially as retractors, to hold aside the edges of wounds during various operations for the removal of tumors, ligature of arteries, &c., and to keep out of danger arteries, veins, nerves, and similar important parts. The smaller retractor answers the purpose of the wire tongue depressor, devised by Dr. Allen, of Cambridge, and serves as an admirable retractor to draw aside the cheek or lips in various operations about the mouth and maxillary bones.

A still farther advantage of these instruments is their very trifling expense; the whole set of four being furnished by our instrument makers at a sixth part the price charged for any of the elaborate forms of specula.

Medical and Surgical Journal.

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M. CLAUDE BERNARD ON THE ACTION OF ANÆSTHETICS.

FROM a lecture of M. Claude Bernard on the action of anæsthetics—published in the *Gazette Hebdomadaire*—we translate the following statements.

Ether and chloroform, which put the animal in repose by suspending the action of the nerves of sensation, have also a direct action on certain orders of movement inde-