

them. It is necessary to have two of them for use ; one for the upper teeth, made straight, the other for the lower, bent at almost a right angle. I had wished to have accompanied my description with a drawing, but it would scarcely give a more correct idea of its form than can be done in words.

The straight instrument, then, is nothing more than a pair of forceps, about the length of the common pairs (five or six inches), with the blades hollowed out and smoothed, similar to a speculum auris, so as to slip easily by the side of the root, and converging towards the points, so as when closed to leave a conical space corresponding to the shape of the root, the edges at the points being perfectly sharp, like a knife. The manner, therefore, of using it is simply to insert their sharp edges between the root and its socket, keeping as close to the tooth as possible, and gently to insinuate the blades down on each side of it : however deep the stump, this is easily done, and my patients tell me with very little pain indeed. When deep enough to feel a secure hold, a slight rotation should be made, and the stump being loosened, is removed with the greatest ease and certainty.

The advantages of this over any other instrument that I have seen, or believe to be in use, are so palpable, that nothing more need be urged in favor of it : it is scientific in its principle of action, which certainly the punch is not. The cases which I have now treated with these forceps have been so completely successful, even beyond my most sanguine expectations, that I speak with confidence, and should feel the greatest pleasure in receiving a visit from any medical gentleman who would wish proof of its superiority over the old instrument ; for which purpose I would beg them to select the most difficult cases they can meet with (for the more difficult, the more satisfactory the result). My object is the simplifying, and rendering very much less painful, that much-dreaded operation, the extraction of stumps ; to discard from use entirely, if possible, that unscientific instrument, the punch ; and to substitute for it one that I look upon as a very valuable improvement in our branch of surgery. Whether or not I have succeeded, must be left to the consideration of all who are anxious to adopt, without prejudice, the safest and best means of alleviating the sufferings of their fellow creatures.—*Ibid.*

ON THE MOTIONS OF THE PUPILS.

BY THOMAS WHARTON JONES, ESQUIRE, SURGEON.

THE opening in the iris called the *pupil*, is subject to contraction and dilatation for the purpose of regulating the quantity of light admitted into the eye.

When contraction of the pupil takes place, the iris becomes broader in consequence of its pupillary edge moving to a greater distance from its fixed or ciliary margin. When, on the contrary, dilatation of the pupil occurs, the iris becomes narrower, its pupillary edge is elongated, and is drawn towards its fixed or ciliary margin.

Contraction of the pupil is produced by the impression of a strong

light on the retina, or of ordinary light when there is increased sensibility of the latter ; whilst weak light, or diminished sensibility of the retina to ordinary light, is the condition under which dilatation of the pupil takes place. In ordinary daylight, when the eye is not particularly employed, the pupil is commonly neither much contracted nor much dilated, but exists in a middle state.

Some physiologists ascribe the motions of the pupil to muscular contraction. They admit a circular muscle around the pupillary edge of the iris for the contraction ; and radiating muscular fibres, proceeding from the pupillary towards the ciliary margin of the iris, for the dilatation of the pupil. According to this view of the subject, dilatation of the pupil must be, like contraction, an active state of the iris.

Other physiologists, who do not admit muscular fibres in the iris, have supposed that it possesses an erectile structure,—that by an increased afflux of blood into which, the iris is distended, and the pupil in consequence contracted ; and that, when the blood retires, the vessels of the iris become empty, and dilatation of the pupil takes place in consequence of the contraction of the iris, by virtue of the elasticity of its tissue,—a property which is essential to all organs having an erectile structure, and subject to sudden dilatation and contraction. This opinion, it will be perceived, tallies with the idea generally entertained, that dilatation of the pupil is a passive state of the iris, and that it is that into which the pupil falls in paralysis of that organ.

But, it may be asked, “Is dilatation of the pupil really a passive state, a state of relaxation of the iris ?” To such a question I would answer, “No.” On the contrary, I believe that dilatation of the pupil is as much an active state of the iris as contraction of the pupil is, and that the really passive state—the state of relaxation of the iris, is that in which *the pupil is neither much contracted or much dilated*,—a state in which the pupil is :

In the ordinary daylight, when the eye is not particularly employed ;
In simple paralysis of the iris, with sensibility of the retina ; and
Some time after death.

This middle state of the pupil is that to which it, by means of an inherent elasticity of the tissue of the iris, always returns after the contracting or dilating force has ceased to act. This tendency of the pupil to return to the medium state after the power which contracts the larger circle of the iris, and consequently dilates the pupil, has ceased to act, is well exemplified by the following experiment.

Lay open an eye by cutting it across, and remove the humors from the anterior segment, which place under water ; then introduce the point of a fine forceps with its blades closed into the pupil, and allow the blades slowly to separate—dilatation of the pupil will be by this means produced. If the forceps be now withdrawn, the pupil will be observed slowly to contract, until it resume the medium state in which it was before the experiment.

As to the nature of the structure in which reside the forces by which the iris is moved, I have already shown, that if the motions of the pupil were produced by an erectile structure of the iris, dilatation of the pupil must necessarily be a state of relaxation of that body, which I have

demonstrated not to be the case, consequently the motions of the pupil are not produced by an erectile structure of the iris.

Although muscular fibres, such as occur in other parts of the body, cannot be demonstrated in the iris by the aid of the microscope, still circular and radiating fibres may be seen, which bear a considerable resemblance to those of muscle. Whatever the structure may be, I would only observe with regard to its action, that its contractile force need not necessarily be so great as that of muscle, because the iris being suspended in a watery medium, less power is required to move it than if it were suspended in air, in consequence of the resistance of its own weight being thus in a great measure removed.

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COLD AFFUSIONS IN SCARLET FEVER.

In scarlet fever cold affusions afford a very useful resource, and are often followed by excellent effects. They are especially indicated when there exists a burning heat over the whole body, insupportable to the patient, agitation and profuse sweating; also when the disappearance of the eruption has augmented the principal symptoms, and given rise to symptoms of cerebral congestion. In all these cases affusions will be useful. To fulfil this indication, the patient must be placed in a bath-room, the feet immersed in warm water, and the head or back affused with the same liquid at the temperature of 60° to 70° Fahr. The affusion must be repeated more or less frequently, according to the state of the patient's strength. In general, prompt relief follows the employment of this means; the eruption often disappears, and the nervous symptoms are dissipated. Affusions, on the contrary, are improper when the patient does not experience heat; still more when he complains of cold, whatever may otherwise be the severity of the symptoms which are present.

If from unreasonable resistance on the part of the patient or his family, or any other circumstance, the affusions cannot be employed, it will be proper to bathe the head, forehead and face with sponges dipped in cold water; but this means is much less efficacious than the other. Still in puerperal women having scarlatina, when there exists bronchitis more or less intense, the coincidence of this bronchitis with the puerperal state must render us very circumspect in regard to employing affusions; it is then better to limit them to the head, or to be satisfied with the plan already suggested, of bathing the parts with a sponge.

Warm baths, though much less energetic in their action than cold affusions, may be used with advantage toward the decline of the eruption, when the skin still retains its heat and dryness; likewise when the eruption grows pale and seems about to disappear, a warm bath will often recal it, diminish uneasiness, prevent nervous symptoms, and give an easier and more favorable issue to the malady.