DESCRIPTION OF A NEW STRICTURE-DILATOR ON THE DOVETAIL PRINCIPLE.

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In the *Medical Press and Circular* for April 3rd, 1867, I directed the attention of the profession to a stricture-dilator, constructed upon the dovetail principle, which appeared to me to be adapted for meeting the objections that have been advanced against dilators, in which the forcer is conducted home upon a rod, soldered at the vesical end only, as in the *Perrève* instrument. Under the name of *Perrève*, I include all dilators constructed upon his principle—*i.e.*, having the conducting-rod soldered and fixed at the vesical extremity. The comparison, however, may be unfair with respect to *Perrève's* dilator, inasmuch as the projecting of its conductor for a few inches beyond the handle very much diminishes the chance of buckling when the blades are in process of divarication by the forcer.

In the instrument I described and illustrated in April, the male portion of the dovetail forms part of the lower blade; whereas the forcer is traversed by a canal, deficient inferiorly, for the passage of the neck of the conductor while the instrument is in action. I am informed that a dilator with the above described arrangement of dovetail cannot be made of the *small* gauge of the *finer* *Perrève* dilators, and at the same time have the solidity it should possess. By the *finer* *Perrève* dilators, I mean dilators with a gauge from end to end, of 2, 3, and 4, of *Weiss's* scale.

When, however, the relative positions of the component parts of the dovetail are reversed, the lower blade being hollowed by the dovetail canal, for the passage of the male portion, formed along the lower part of the forcer, the dilator can be made of the calibre of the *finer* *Perrève* dilators, and have the strength and solidity necessary for safety while forcing a stricture.

I must not omit to caution the surgeon regarding the manufacture of the dovetail dilator; as *Perrève* wrote, concerning the manufacture of his dilator, that it should be perfectly made, so "that with solidity there should be joined an exact precision." (*Traité des Rétrécissements Organiques de l'Urètre*, p. 288. Par Victor *Perrève*. Paris: 1847.)

I can hardly conceive, as regards surgical instruments, a greater mistake than that of using the cheap imitations of the manufacture of first-class makers. These counterfeits, to the eye, look as well as the good instruments. But there are frequently, in the materials of which they are composed, elements of danger which may, at any moment, bring trouble upon us. It was for this reason that I selected for the making of the new dovetail dilator a firm of a world-wide reputation, the Messrs. *Weiss*, whose name alone is a sufficient guarantee of the excellence of its construction.

The new dovetail dilator, as I have just mentioned, may be made of very small calibre, and possess the required strength for safe working. Thus, my instrument is only large No. 2 at the point, then gradually rises to No. 3, and finally to No. 4 (*Weiss's* gauge), which it retains to the handle.

Description of the New Dovetail Dilator.

The dilator, like *Perrève's*, is composed of two blades soldered together at their vesical ends (figs. 2 and 4).† Instead, however, of there being a conducting-rod, this form of conductor is altogether dispensed with; and, therefore, when the instrument is in use, it is composed of—

1. The two blades with their corresponding half-handles.

2. Dovetail dilator with forcer between blades.

2. The two clamps fixed by screws to the lower half-handles.
3. The forcer.

The lower blade differs essentially from the lower blade of the *Perrève* dilator, which is merely slightly grooved for the play of a small portion of the circumference of the conical forcer of that instrument. In the new dilator, the lower blade forms the greater portion of a cylinder, which would be complete only for an interspace along its upper wall, for the passage of the neck of the male portion of the dovetail of the forcer. (Figs. 2, 3, and 4.)

The upper blade is slightly grooved, to correspond to the upper margin of the forcer. (Figs. 3 and 4.)

Fig. 3.—Clamps and handle of dovetail dilator.

The large end of each blade is soldered in a central groove, channelled the whole length of its corresponding half-handle. (Figs. 2 and 3.) The half-handles are identical with the half-handles of the *Perrève* dilator, excepting the dovetail groove in the lower one. The *Perrève* handle is so excellent that I have retained it, although the new dovetail dilator does not require so careful an arrangement of handle as the conducting-rod and conical forcer combination.

Fig. 4.—Vesical end of dovetail dilator and of forcer.

The soldered vesical end of the dilator is traversed by a canal. (Figs. 2 and 4.) This canal is continuous with the grooves in the two blades; which blades, when grasped by a stricture, form a sufficiently perfect passage for the urine, and thereby enable the surgeon who may require such assistance to know when the instrument has entered the bladder.

The Forcer.—The forcer may be made of hollow tubing or of solid metal. The latter is far the best. It is in shape, vertically, somewhat oval down to the dovetail. The dovetail is formed along its lower edge, and should extend from point to handle. (Figs. 1, 2, 4, and 5.) This, the male portion of the dovetail, ought to be so shaped and sized as to correspond to the groove and slit of the lower blade, merely allowing of its gliding with facility when being pushed home. The forcer should

Fig. 5.—Vesical end of dovetail forcer, having a different curve superiorly from that seen in Figs. 1, 2, and 4. It will be found, on trial with a forcer of this curve, that scarcely any appreciable space is formed between its vesical end and the two blades, when it is gliding between them.

not rise to its full diameters too abruptly. The curve seen in Fig. 5 seems to me the best form of curve for separating the blades where grasped by a stricture.

The number of forcers to be supplied with the dilator depends upon the requirements of the surgeon. For instantaneous dilatation to the full calibre of the canal, of course, so many are not necessary as for rapid dilatation in one *séance*. For strictures in the anterior portion of the urethra, a shorter, but *straight*, dilator will be found easier of introduction than the curved instrument.

Since the above description of the dovetail dilator appeared in Ireland, I have designed a tunnelled handle for the dilator. I have also transferred the opening for the entrance of the urine from the point to the convexity of the curve, and have had the point made bulbous, like that of Sir H. Thompson's stricture-sound. The bulbous point greatly facilitates the introduction of the dilator.

Both forms of the dilator are manufactured by the Messrs. *Weiss*; but, as the pressure upon the upper blade can be so exactly graduated by the screws of the tunnelled handle, and the bulbous point renders the introduction so easy, the dilator thus constructed I prefer.

* The engravings by Messrs. W. and A. Oldham, Dublin.