and also, probably, some fibres of the levator palati that may have remained uncut.

The after treatment should consist in giving, at regular and short intervals, good beef-tea, isinglass dissolved in new milk, and the like, for the four first days: indeed, immediately after the operation, a cup of strong soup and a little wine will greatly revive the patient, and strict silence should be enjoined.

The sutures should be removed on the third, fourth, or fifth day, just as the part may be observed to have united: of course, until union has taken place, they should not be taken out, but when there is evidence of union, I am satisfied that the sooner they are gently cut out after the third day, the better.

If any erysipelatous blush should arise about the wound, the part should be pencilled carefully with a twenty-grain solution of nitrate of silver, but not permitting any to touch the wound itself.

The subsequent training of the voice in speaking is a matter of very great interest and importance; for what is the advantage of the most successful operation, what benefit is there after all the patient's fortitude and suffering, if articulation be not improved? Immediately after the operation, and for several weeks, the improvement in the speech is scarcely observable; and without careful education of the voice, a very long time may elapse before the organs of speech adapt themselves to the new condition of parts. If, however, the surgeon will take the trouble of seeing his patient frequently, and will teach him to pronounce those letters over and over again, in the sounding of which he finds him most imperfect, he will soon observe a marked improvement; then causing him to read or speak aloud, marking the words in which there is any defective articulation for correction, he will have the great gratification, within some months, of listening to a fellow-creature who, by his instrumentality, has regained a most useful organ, of which he had long been deprived through a congenital defect.

ART. XI.—*A New Instrument for the Operation of Paracentesis.* By PHILIP RUSSELL, A.B., M.B. T.C.D., Bangor, County of Down.

THE instrument which I have invented for the operation of paracentesis consists of—first, a hollow cylinder of India-rubber, about six inches long, and one inch and a quarter in diameter. This cylinder is furnished with two bullet valves—one

at either end—so arranged as to act like a pump when the cylinder is held perpendicularly, and worked by the alternate closing and opening of the hand. To either end of this cylinder is fitted a gum-elastic tube, about twelve inches long, and about the size of a No. 8 catheter. To one of these gum-elastic tubes (*viz.*, that through which the fluid is to pass into the cylinder) is fitted a silver tube, six inches long, and of such caliber as to fit exactly the canula used in the operation. This

tube is an air-tight fit, and passes through the canula just so far as to allow one inch to protrude beyond it, and remain tightly fixed in that position. The free end of this silver tube is rounded like a catheter, and is perforated by three rows of

small holes, to the distance of an inch from its extremity. The other gum-elastic tube affords a passage for the fluid pumped out by the cylinder.

The instrument is used thus:—After perforating the chest with the trocar and canula, the trocar is withdrawn, and the silver tube at once inserted in its place in the canula, and, fitting it tightly, remains there firmly fixed; then, the left hand securing the canula and tube in their place, the right hand, by alternate closing and opening, pumps out the fluid.

This instrument has three advantages which are not combined in any contrivance which has been hitherto used—First, air cannot gain admittance; the two valves effectually prevent this. The moment the hand is relaxed, the bullets close the openings (the cylinder being held perpendicularly), and before removing the instrument, the silver tube should be drawn out of the canula, to the extent of one inch, so as to close the holes at its extremity. As an additional precaution to prevent the entrance of air, the other end of the instrument may be immersed in a basin of water (a suggestion for which I am indebted to Mr. Smyly). Second, the chest can be more completely emptied by means of the pumping apparatus than by the usual method, and it has this advantage over the India-rubber bag and stop-cock, that it need not be removed and reapplied (as the latter must be), and also prevents the admittance of air, which the latter does not effect. Third, the formation of the free end of the silver tube has this advantage over the canula used alone, that, whereas the latter is frequently plugged by lymph, or by the tissue of the lung pressing against it, the former holds back the lung while the fluid escapes through holes in its sides, and as there are three rows of holes, a plug of lymph cannot close them all.

I have used this instrument with the greatest satisfaction in a case of empyema now under my care, the particulars of which I will not now communicate, as the history of a case still under treatment is always unsatisfactory.