year, 885 were under 5 years of age; but only 229 between 5 and 10, and 215 between 10 and 15. Now, whence this falling off? Either the little patients must have died or been cured; that they have not died, at least in anything like the same proportion, may be inferred by comparing the number of children alive in London at these two quinquennial periods with the total population of London. I have no data at hand as to the population of London in 1869; but I cannot be far wrong in assuming that the proportion of the infant population under ten years of age to the total population, remained the same as it was at the census of 1851—this was 1 in 8.004 under 5 years of age, and 1 in 9.69 between 5 and 10; there are, therefore, almost as many children living between 5 and 10 years of age as there were under 5, yet those affected with hernia have diminished by nearly three-fourths. I hold, then, that there is incontestable evidence of the curability of congenital inguinal hernia in the child; and the evidence is almost as conclusive that it has been effected by the use of the truss.

As to the *modus operandi* of the cure of infantile congenital hernia, whether by closure of the rings or by obliteration of the canals in consequence of the pressure of the truss-pads, I am of opinion that the truss cures, not so much directly by its pressure, as indirectly, by preventing the escape of the viscus from the abdominal cavity. In these cases, Nature herself comes to our aid—a bargain is struck. If, says she to the surgeon, you will undertake to keep that little bit of bowel out of my way, I will undertake to close that small passage which I was engaged in doing till interrupted by the intruder. If this view be correct, the cure would result neither from the closure of the rings nor from the obliteration of the canals, but from a simple completion of that process which birth had interrupted.

The great frequency of inguinal hernia in infants is, in fact, due to a retardation of that natural process which we call the descent of the testis: the process has not been completed quite in time; birth has taken place a little too soon, and the vaginal canal which should have been closed and obliterated remains open. If birth could be delayed for a month, congenital hernia would probably be a rare occurrence. As regards the curability of non-congenital inguinal and of femoral hernia by truss-pressure, the evidence is also conclusive, though the occurrence is comparatively rare. This is what might be expected from the different conditions one has to deal with; for whereas in the congenital form of hernia we have seen there is merely retarded development, here we have to do with actual disease. There has been a giving way—a yielding or rupture, as was formally supposed—of a texture already fully formed; a stretching or elongation of this into a pouch (the hernial sac), and a gradual yet forcible separation of tissues which are normally united. As, then, the conditions are different, so is the mode of cure. In these cases, the truss-pad acts both directly and indirectly: directly, by its pressing together the walls of the sac and of the inguinal canal; and, indirectly, by preventing the entrance of the hernia, and so contributing to the natural tendency which the orifice of the sac has to contract whenever the herniated organs cease to act upon it. There is another mode of cure which I have witnessed more than once in cases of femoral hernia: the mouth of the sac becomes plugged by a piece of omentum, which the pressure of the truss-pad has caused to adhere, and thus the further descent of a hernia is prevented, while the original protrusion is effectually cut off from the peritoneal cavity.

The second question of "A Metropolitan Surgeon" I cannot answer; but I can give him the dissection of a case radically cured by operation. It is taken from the *New York Journal of Medicine* of March 1868.

"A German, forty-seven years of age, affected with a scrotal hernia of the right side, was operated on by Professor Carnochan after Dr. Rigg's method. On the 2nd of May, 1857, the operation was completely successful. Towards the latter end of July, pulmonary symptoms made their appearance; and, on the 9th of September, he died of tuberculosis of the lungs.

"*Post Mortem*, September 10th.—Upon opening the cavity of the peritoneum, the orifice to the hernial sac could not be traced, the internal ring being firmly closed around the cord. On the outer side of the peritoneum, and just below the situation of the internal ring, was found a small rounded body of a yellowish colour, supposed to have been the remains of the hernial sac. The upper portion of the inguinal canal, for nearly an inch, was closed by plastic exudation, which had become organised and somewhat fibrous in its appearance; while the canal at its lower part, and the external ring, were to appearance in their normal condition, though the cord throughout the entire length of the canal seemed to be imbedded in plastic formation."

It must be explained that Dr. Rigg's method of operating for the radical cure of hernia consists in the introduction of a skein of silk into the inguinal canal; and the skein of silk used in this case being too large for the puncture made by the instrument, it was not introduced more than one inch, which will explain the fact of the lower portion of

the canal and external ring being in their normal condition, while at its upper portion both the canal and internal ring were firmly closed.

IS HERNIA CURABLE?

By JOSEPH LAWRENCE, M.R.C.S.Eng., Bath.

IN answer to "Surgical Queries" of "A Metropolitan Surgeon" in the *JOURNAL* of the 12th instant, several cases of congenital hernia in children I have known to be radically cured by truss. To be refreshed in memory, I have to-day seen a little boy, five years old, in whom congenital inguinal hernia of right side was detected when he was a month old. Two well-fitting ordinary spring trusses were at once ordered, so that when one was wetted a dry one might be applied; and these were alternately worn night and day, with strict injunctions to the nurse to place her finger on the ring when removal for washing or changing was necessary, so that the bowel was never allowed to descend. New trusses were, of course, made from time to time as the child grew. This treatment was strictly adhered to until the child was two years old; the trusses were then omitted by night, but worn by day for another half-year; they were then discontinued; and, up to this date, two years and a half, there has been no return of the hernia.

On examining this little fellow to-day, I found a distinct depression and absence of the fatty deposit where the truss-pad had been applied, the skin being tied down to the tendinous structures beneath; and the latter appeared firmer and more resisting on pressure than on the opposite side. In the treatment of hernia in infants, there are two circumstances favouring radical cure which do not obtain in the adult, viz.: 1. If the bowel be never allowed to descend, the opening does not increase, but the bowel does; 2. The fibrous tissue surrounding the canal and rings become firmer each month.

ETHER AS AN ANÆSTHETIC.

By HENRY TRENTHAM BUTLIN, M.R.C.S.,

Assistant-Surgeon to the West London Hospital; late Registrar and Chloroformist to the Hospital for Sick Children.

AT a time when many deaths from the administration of chloroform are being reported, I am glad to find Mr. Morgan advocating the claims of ether as a safer anæsthetic. Although this has been done occasionally during the last few years, it has never been insisted upon sufficiently, and has not been backed up by those who are in the habit of largely administering anæsthetics. Now, however, I think everyone who has had much experience in the employment of these two reagents must allow that it is quite worth while to give ether a fairer trial than it has yet had in this country.

There appears to be a particular class of cases in which chloroform is especially dangerous; and this class of cases we have at present no means of diagnosing. That it includes a large number of cases of greater or less fatty degeneration of the heart, is evident from the most carefully conducted necropsies. The histories of most cases of death from chloroform would further point to cardiac weakness, analogous in some way to that produced by fatty degeneration.

It is well known that chloroform, given in small doses to a *healthy* animal during a considerable time, at first stimulates the heart's action, but later depresses it; given in large doses, however, it acts almost immediately as a depressant to the heart's action: but even the smallest dose, where the heart is affected with fatty degeneration, appears to act as an immediate depressant, and, after a few faint attempts to continue to beat, the diseased heart ceases to act, and cannot be aroused again.

From experiments on animals, from my own experience, and from the much greater experience of many American surgeons with whom I have spoken on the subject, I believe that these are just the cases in which ether may generally be safely administered. The experiments made by the committee appointed by the Royal Medical and Chirurgical Society in 1864, showed that ether acted much less strongly and directly upon the heart than chloroform: and I have often had the opportunity of noticing, whilst giving ether at the Hospital for Sick Children, that even at the end of a long and severe operation, the pulse has increased in force and frequency rather than diminished.

When we possess some easy method of diagnosing these affections of the heart, we may then employ ether only in those cases in which they are supposed to exist; but, until then, would it not be wiser to employ ether generally, at least for adults? If no other good results be gained, the fear of chloroform which at present prevails will be removed—a matter of no small consequence.

The inconveniences of ether are not nearly so great as is imagined—