

Our figures work out for ether at 1 in 2400⁵ and are very similar to those of the London Hospital of 1897—1 in 2910—which were mentioned by Dr. Probyn Williams at the debate at the society.⁶ If these figures are correct it seems to us that in preaching the greater safety of ether than of chloroform anæsthetists would be acting wrongly. We are merely changing the venue of the death from the operating-table to the bed, the house surgeon's signature for the coroner's. The chief cause of this frequent and, in cases, alarming complication, then, is ether. The contributing causes are the length of the operation, the previous administration of gas, the inexperience of the anæsthetist, and the exposure of the patient during and after the operation.

The remedies are not so obvious. Manifestly we cannot advocate the entire giving up of ether, for, after all, chloroform has troubles of its own. But we do recommend chloroform for all long operations on the trunk. We do not desire to banish the previous administration of gas but it should be so arranged that too much cannot be given by inexperienced anæsthetists and that can be best done by having the gas cylinders away from the anæsthetising-room and the gas bag of moderate dimensions, say two gallons. After the operation the patient should have the mouth and nose carefully protected from the cold air of the corridors and the ward by means of a loosely-folded towel over the face.

In conclusion, we must mention that we are deeply indebted to Dr. Russell, the resident assistant physician of St. Thomas's Hospital, who most kindly examined every case to which his attention was called. Without his assistance we could not have been so certain as we are that we have given only true cases of ether inflammation.

POSTSCRIPT.

At the meeting of the Society of Anæsthetists at which the above paper was read there seemed to be some confusion about the object with which it was brought forward. The question as to whether ether or chloroform is the most dangerous was raised from consideration of their post-operative complications. The evidence brought forward in this communication clearly demonstrated that in this particular chloroform was *facile princeps*. Most of the speakers in the discussion that followed dealt only with the dangers that are run during the administration. We have in consequence decided to add to our paper the cases in which a fatal result took place during the period of anæsthesia. One death occurred under chloroform and was that of a child who was being cleaned up after a burn. From the extent of the burn and the condition of the child, aged one and a quarter years, it was an error of judgment to have attempted such a proceeding at all. An abstract of the case is given in the St. Thomas's Hospital Reports for 1900, p. 181. Obviously it is unjust to put the child's death down to the anæsthetic. With ether we were unfortunate enough to have a death also. This was in the case of an anæmic, fat, elderly man who was suffering from an extensive and exquisitely tender cellulitis of the knee. His heart was flabby and he had albuminuria. Ether was administered in an annexe of the ward, as described above, without the previous use of gas. Some difficulty was experienced and the respirations became shallow, death occurring before the operation was begun. None of the staff anæsthetists were present. The last case is recorded in the St. Thomas's Hospital Reports, 1900, p. 179. It is not fair to either anæsthetic to put these results to their account. In our communication we have recorded one case, and probably a second, in which the fatal result was due to ether, but both these cases happened after the return to the ward and therefore out of sight of the anæsthetist or the surgeon. Our statistics on all points raise the question of the relative dangers of chloroform and ether. In conclusion, we wish especially to draw attention to the advisability of changing the anæsthetic to chloroform after a time, when ether has been given originally. The reasons for this are dealt with by one of us in the *St. Thomas's Hospital Gazette*, 1901. This is not a new procedure and many speakers referred to it as their frequent practice. As the fear of chloroform will deter many from its use and the "operative" safety of ether will keep for it many advocates we strongly recommend this change of anæsthetics.

THE FEEBLE-MINDED AND CRIME.

BY MARY DENDY,

HONORARY SECRETARY OF THE LANCASHIRE AND CHESHIRE SOCIETY FOR THE PERMANENT CARE OF THE FEEBLE-MINDED.

My object in writing this paper is to call attention to the fact that a large number of philanthropic persons are expending a great amount of time and energy and good feeling and vast sums of money in attempting to do away with evils which are only the symptoms of a widespread and constantly increasing disease. As a result of many years of work amongst the poor, of a minute attention to the condition of children in our public elementary schools and in their own homes, and of a certain amount of reading and of consideration of expert opinion, I have come to the conclusion that the main cause of most of the evils which keep so many of our people in a degraded condition is weakness of intellect. This cause would operate equally in all classes of society but that in the so-called upper classes the feeble-minded are generally guarded from the natural consequences of their defect. Even amongst these, however, the trouble is passed on by marriage, and probably some cases escape notice and account for instances which occur, otherwise incomprehensible, of descent in the social scale. Mr. Holmes, the prison missionary, tells us of one man whose parents were highly respectable, who had no motive for stealing, who was well educated and intelligent generally, but who could not help stealing watches. I know at this moment of a boy, whose father does not belong to the working-classes, who has been twice convicted of stealing; he is abnormally naughty in other ways and his brother is in an idiot asylum but no one recognises the fact that he is not responsible for his actions and he will descend in the scale of life until he is a habitual criminal. Further, weakness of intellect is in the majority of cases an inherited disease and a very large proportion of feeble-minded persons have children, either with or without marriage. There can then be no way of stopping the increase of this disease but by caring for feeble-minded persons during their whole lives.

Hooligans, or corner-lads, criminals, paupers, and drunkards—all are these frequently only because they are feeble-minded. The lying-in wards of our workhouses, idiot asylums, deaf and dumb asylums, special classes, reformatories, and industrial schools, to say nothing of the homes which are springing up everywhere as the result of private charity—all are fed by our feeble-minded population or their offspring (for it must be remembered that the child of the merely feeble in mind may be an idiot), and the managers of these refuges all fail to stem the evils with which they contend because they act on the assumption that temporary care and training are all that are needed. So after a term of years their patients are turned out again on to the world, trained to obey and to behave decently under the strict supervision of their keepers but not trained to stand alone and in many cases only more helpless than they have been kept in leading-strings so long. It needs to be understood that the feeble in mind cannot be trained to stand alone. As the lame man wants his physical crutch, so these poor creatures need their mental crutch and when that is withdrawn they inevitably fall. The more amenable they have been to good influences the more readily will they succumb to bad ones. They lack will-power and this must be superimposed from without; if it be a power for good all is well, if for evil, as it generally is, the result is disastrous.

Two years ago I made an inspection of all the children in actual attendance in the board schools in Manchester with a view to ascertain how many of them were in such a mental condition as to make instruction in special classes necessary for them. At one time there were 494 children in these schools needing such instruction out of a total of 39,600. Of these 494 children 214 were "dull and backward," it being understood that their condition was due to their state of mind and body and not to neglect, 276 were "mentally feeble," and four were deaf-mutes. I need not say that to obtain these results I did not rely upon my own opinion—in every case the child was seen by Dr. H. Ashby of the Pendlebury Children's Hospital. I further saw in their own homes 45 children who were excused from school attendance by medical certificate. A more minute analysis of these two sets of children gives the following results. Of the 494 feeble-minded children attending

⁵ Possibly 2 in 2400 if the case recorded above is counted. Also see postscript of fatal cases added to this paper.

⁶ Transactions of the Society of Anæsthetists, 1900, p. 101.

school, 78 boys and 63 girls were so hopelessly defective that it would be impossible for them, in the most favourable circumstances, ever to reach a normal mental standard. Of these, again, four boys and eight girls were so imbecile that they could be properly placed only in an idiot asylum. Of those excused from school attendance there were 22 boys of this type, of whom 10 were asylum cases, and 11 girls, of whom three were asylum cases. We thus get a total of 100 boys, of whom 14 are asylum cases, and 74 girls, of whom 11 are asylum cases. Thus leaving out of question the milder cases, it is found that amongst the board school children of Manchester there are 174 children who can never be trained to take care of themselves and who must inevitably be a great danger to society. Only about half the children of Manchester attend board schools and there is reason to suppose that similar results would be obtained by an inspection of the other half who are in voluntary schools. Those children who are excused from school attendance were not necessarily worse than those going to school, but their mental or physical peculiarities either made it impossible for them to go safely through the streets or else caused them to be unmanageable in company with other children.

Last year I inspected in the same manner all the voluntary schools in a large non-school-board area near Manchester, including Church of England, Congregational, Roman Catholic, Undenominational, Methodist, and British schools. Here, again, the cases which I selected were seen by skilled medical men. We put on our list 150 out of 3000. This larger proportion was accounted for by the fact that one school received scholars from a home for waifs and strays who were all of a very low type.

It appears that there are always about three defective boys to two defective girls. This, I am told, is because all characteristics are more strongly transmitted to males than to females. The law so far recognises the existence of this class of children as to provide in a half-hearted sort of way for their education up to the age of 16 years. I say in a half-hearted sort of way because it permits but does not enforce the provision of special classes for their instruction. It defines them as "children who by reason of mental or physical defect are incapable of receiving proper benefit from the instruction in the ordinary public elementary schools, but are not incapable by reason of such defect of receiving benefit from instruction in such special classes or schools as are in this Act mentioned." The condition of some of these children is accounted for by curable physical disease—such as deafness or bad sight; of others by early neglect and bad home surroundings; of others by illness which has caused them to lose some years of school life. In these cases the extra time at school and the minute attention to their particular requirements given in the special class will suffice to bring them up to the level of the average child. But there are many more in whom the trouble is of a quite different nature and who are no nearer to being cured at the end of their school life than they were at the beginning. It must be remembered that many amongst the milder cases classified in Manchester would be incurable though the disease had not in them assumed its most troublesome form. Given, then, in any town a complete system of special classes, in those classes will be found the raw material for most of our social failures; boys and girls who are recognised as abnormal up to the age of 16 years and who are then discharged to be worked up by the pitiless machinery of our streets into the criminals, paupers, and lunatics who are the insoluble problem to all our philanthropic agencies.

Let us take examples of a few of the very numerous types of feeble-minded children and try to see what becomes of them.

R. is a gentle-tempered, obedient boy, aged 16 years. In his spare time he plays with sticks and stones like a child or at "gee-gee" with his bed-posts. He is at work, but it is doubtful if he will keep his situation because he has hurt himself with the machines. He has more than once stolen because he was ordered to do it by bigger boys who took his stolen goods from him. He will never become a "Hooligan" but he is very likely to become a thief or a train-wrecker. Quite recently the police reports contained notices of two boys convicted for attempted train-wrecking who were known to be of feeble mind. Older boys were implicated in the same charges with them. Probably R. will become a father.

T. is a lad who can do a certain amount of head-work, though he is behindhand. He is fairly strong physically

and will probably be able to maintain himself after a fashion as a labourer. But he is one of that peculiarly difficult class of children who have no moral sense. He is exceedingly mischievous and shortly before I saw him he had procured a box of matches and set fire to the cloaks in the school cloak-room. Little J., again, is another boy of this kind; he is destructive to the last degree and having set his heart on achieving one particular piece of mischief (the pulling down of a piece of lead-piping from a wall) even very severe physical punishment several times inflicted would not keep him from returning to it again and again. Restless and troublesome in class, dangerous in the playground, quite unashamed, untouched by kindness or punishment, these lads will inevitably grow into the Hooligan type. L. is 20 years of age now and earns some sort of a living; he is the terror of all who have to do with him, the son of a father who was "queer," and he is an ill-conditioned, badly-built lad with a malformed head. I think he has not yet been convicted but that is only a question of time. Perhaps he is a degree better than the lad who kicks an unoffending workman to death; many people have tried to keep some hold on him. Probably all these lads will become fathers.

G. is a boy, aged 15 years, an orphan. He attended school regularly but never learned anything. He was taken on at the "shop" where his step-grandfather worked and could do what he was put to, but he was so fascinated by the leather bands going round the wheels that he could not resist the temptation to put bits of rag and string under them to see them drawn into the machinery. He was, of course, discharged. He is now in an idiot asylum and he will be discharged at the end of seven years to take his share in producing the next generation.

It would be easy to multiply cases, but these must suffice for the boys. Briefly speaking, what generally happens to feeble-minded boys of the poorer classes is this. A boy leaves school quite unable to take care of himself. Very often the one wholesome guiding influence of his life ceases with his school days, his parents being frequently only slightly stronger in mind than himself. Their one notion is to make him earn money for them. He knows no skilled work and cannot keep a situation if he gets one.¹ Then he goes upon the streets, sells matches, shoelaces, papers, and generally ends by getting into gaol. By this time he has become used to a vagrant life and as he can only move along the path of the least resistance and as it is made so much easier for him to go wrong than to go right he continues to go wrong and becomes a confirmed criminal. So he grows up through a pitiful and degraded youth to a pitiful and degraded manhood and dies, leaving behind him offspring to carry on the horrible tradition.

The following are some examples of female cases. With the girls the evil is more obvious though not more real. To begin with the moral imbecile.

S. is a girl in a board school in Manchester reported on by Dr. Ashby. She was bright at her lessons, fairly well grown, and pretty. Her father was a criminal who had deserted his wife. Her appearance was normal except for a restless expression in the eyes. She stole in the school very ingeniously, taking garments which she sold for a few pence to buy sweets. When her mother flogged her she slept out and was more than once taken home by the school attendance officer. She was quite without shame—in fact, she gloried in her achievements. When spoken to by a skilled observer it was at once obvious that her mental condition was abnormal. Dr. Ashby said: "If I were to tell a judge and jury that this girl is not responsible for her actions they would laugh at me, but if she is not put under constraint at once she must inevitably join the criminal classes." This girl would become very likely such a one as N., a girl 18 years of age, whom I knew and who was living the worst possible kind of life. I could make no impression at all upon her. Her answer to my remonstrances and offers of help was a silly laugh and "the police can't get me for anything I do." She had no conscience beyond half-a-crown and costs. She also was a rather pretty girl and did some work for her living. Going to see her mother I found that the latter was a deaf-mute. Or possibly S. might become a criminal of another type, like poor little M. who was

¹ Dr. J. Kerr, late of Bradford and now medical adviser to the London School Board, who has given much attention to the children in the special classes there, says it is characteristic of the boys that though they can do some kinds of work and generally find situations when they leave school they never keep their places and are always on the streets.

sentenced to 15 years' penal servitude for the manslaughter of her employer's children by drowning them. M. was 15 years old and would be released when she was 30. All these three girls would probably become mothers.

Fortunately, with the girls as with the boys, the morally defective are not the commonest type of the feeble-minded.

E. is a small delicate child whose mother is a deaf-mute. P., aged 12 years, is in Standard I. She cannot speak clearly, cannot see properly, and cannot carry a message. T. is an overgrown, delicate, defective girl, aged 12 years. These three girls are of a very usual type, nervous, timid, biddable children, just those who are ready to fall a prey to any evilly-disposed person who comes across them. These are the children who to a very large extent account for the child-mothers in the lying-in wards of our workhouse infirmaries. This extract from the *Manchester Evening News* of Feb. 26th, 1900, gives an example of how the trouble comes to pass: "It was stated to the magistrates at the City Police Court this morning that S. T., a girl of nearly 16 years of age, had been missing from her home since Friday morning, when she left home to go to her work but did not turn up. *As she is of rather weak intellect* it is feared she has been decoyed." It is not very long since I saw a child, aged 14 years, in the workhouse infirmary with her infant in her arms and there are few women guardians who could not give several similar instances.

The life of girls such as these is pitiable in the extreme. Year after year they return to the workhouse to bear children, many of whom fortunately die but some of whom live to repeat their mothers' experience. Year after year they become more degraded, wretched, and restless. At the present time there is in a workhouse a feeble-minded boy whose feeble-minded mother has been in and out 21 times during a year. In the same workhouse there have been during the last three years amongst the mothers of illegitimate children 16 who were of weak intellect. Nor do the girls who come under notice in this way represent nearly all of their class; very many are confined at home and it is a marvel that more do not die merely from the hardship of their conditions. In one house to which I went to inquire for a feeble-minded boy I found also his sister, a woman 35 years of age, of weak intellect and deaf, nursing her third illegitimate child.

This disease, moreover, as things are at present is no bar to marriage. I know of a woman, aged 28 years, who was married at 16 years to a notoriously half-witted man. She "did not know he was silly" when she married him. She is very ill and evidently has some serious internal complaint which will soon kill her, when her husband will be at liberty to marry again. She has had 10 children, of whom she has "buried eight," as the phrase goes. The remaining two are feeble-minded, the elder, a girl aged 13 years, in a marked degree. In all probability this child will be a mother before long. Mr. Holmes, from whose book I quoted above, tells me that many children of weak intellect are committed to reformatories, certified as "fit" because the medical man who has had them under observation has seen them only under such control as prevented their mental peculiarities from showing themselves. Frequently when these children have been a little while in their new homes the unfitness becomes manifest and because there is no provision for them under the same roof with sane children (indeed, there hardly could be such provision) they are discharged, to come again upon the streets and again to be convicted. In this way he has known the same boy to be twice committed to a reformatory within six weeks.

Anyone who reads the police reports must be struck by the number of apparently purposeless crimes that are committed. It is not to be wondered at when we realise how large the proportion is of the "borderland" or semi-insane intellects. Recently a case was reported of a woman who was convicted for the fortieth time. It was added that she was known to be of weak intellect.

Mr. Holmes states that many, the notorious Jane Cakebread among them, who are treated as habitual drunkards are really not dipsomaniacs but are not quite sane. He says: "These people are not what they are because they drink but the reverse: they drink because they are what they are. In a word, drunkenness is not the cause but the result of their condition. Doctors will not, of course, certify them to be insane; until, therefore, the State makes some provision for the half-mad their case is hopeless and frequent tragedies will continue."

As to the immediate suffering and degradation that are

due to this disease there can be no doubt. The most horrible house which I ever entered was one to which I went to inquire for a child excused from school attendance. He was brought to me from his bed, his clothes having been pawned as soon as it was known that the attendance officer would not call. It was impossible to unravel the relationships in that family, but there were, I think, three generations of weak-minded persons there; certainly there was an elderly woman of whom it would be difficult to say whether she was most bad or mad, a woman aged 23 years and a boy aged 14 years who were nearly idiots and the little lad on whose account I went. But all this suffering and degradation, terrible as it is, is insignificant compared with the misery we are heaping up for future generations. It has been urged as a reason against taking steps to counteract the evil that if we would let weak-minded persons alone they would die out. Unfortunately that is not so. They die young, it is true. The average life of an idiot is only 20 years. The feeble-minded seem to be generally short-lived in proportion to the degree of their mental weakness. It is rarely, indeed, that children who are weak in mind are strong in body. There seems to be a connexion between congenital deaf-mutes and these children. They are peculiarly susceptible to disease, particularly to consumption, and succumb more readily than normal persons to epidemics. But a great number of them live to have families, and their offspring are often more feeble in every way than themselves. This would point to the conclusion that they would in course of time die out, but unfortunately they are not left to themselves: the strong and bad mix with the weak and mad, and so the horrible story goes on and there are always enough accidental cases to renew the strain.

It would be easy to multiply cases and instances in support of what I have said but it is unnecessary. After all, everyone who is acquainted with the sin and misery of our social life has knowledge of one aspect or another of the "feeble-minded problem" and could supply evidence of the existence of the evil. What I am concerned to do is to point out the fact, which many people seem to shrink from recognising, that there is no way of curing this disease in the individual and that the only way of putting a stop to it is to prevent its transmission to the future by careful segregation of the sufferers from their early childhood to their death.

It is grievous to consider the pitiful waste of time and goodness, skill, and money which is involved in treating this trouble temporarily, where it is recognised as existing, and in attempting to cure its symptoms, drunkenness, vice, and crime of every description, where it is not recognised. There is a deplorable futility in convicting a feeble-minded woman forty times, a deplorable loss of power involved in forty times putting all the machinery of the law in operation for one poor creature who was not responsible for her own actions and who should have been placed in happy safety before she was of an age to be dangerous to herself or to society.

It is sad to remember, too, how many charitable agencies are wasting their powers because they do not understand that it is impossible to "rescue" the weak-minded unless it is done once for all. People who deal with these children and see them under control behaving in decent and orderly fashion and generally accepting good habits are apt to forget that the control, and that alone, is the cause of the good behaviour, that so soon as this control is removed the patients are likely to succumb to any other influence which may be brought to bear.

So long ago as 1875 a special committee of the Charity Organisation Society summed up its report thus: "After the period of training a few may be discharged as cured and will become merged in the mass of the population. A large number may be employed as they often are now [employments specified 'at home,' 'in asylums,' &c.]. But, *after making all these deductions* a large proportion of the young persons who have passed through the training schools will prove unfit to be restored to society even under these modified conditions, and for these adult custodial asylums must be maintained at which they may be permanently cared for in the most economical manner, with the advantage of constant medical supervision. But such is the sustaining, healing influence of regular employment that even the adult asylums ought, as far as possible, to be managed on the principle of industrial establishments, having gardens, farms, and workshops of various kinds connected with them to one or other of which every patient capable of doing anything should be attached. Such a

system properly carried out would diminish the expense of the institutions."

In connexion with this admirable suggestion it must be remembered that the feeble-minded person can never become wholly self-supporting. As the late Sir Douglas Galton said, he is in the most favourable circumstances worth only three-fourths of a man. But in the least favourable circumstances he is worth considerably less than that. Putting aside for the moment the question of his own happiness or misery, it would be far cheaper to provide for him by supplementing his own earnings in an industrial home than to keep him as a criminal or a pauper.

The thing can be done and now is the time to set about doing it. It is well known that these children, so long as they are children, are exceedingly persuadable and affectionate, and that they readily attach themselves to places and persons. When they have once become habituated to the life of the streets, when they have become parents they are much more difficult to deal with, are restless and uneasy and anxious for change and for the excitement which they have once tasted. The special classes provided under the Elementary Education (Dull and Defective Children) Act give us the first step necessary towards the permanent care which alone can be effectual in such cases. Children who are acknowledged to be fit subjects for special education in the sense determined by this Act should be under careful medical observation for the last few years of their school life with a view to ascertain whether they are really suffering from mental incapacity. If they are they should immediately on leaving the day school (and in some cases before the time for their doing so has arrived), without any disastrous interval spent in learning the lesson of the streets, be transferred to a boarding school and thence again to an adult school, in which they might remain, working and playing, all their lives, children to the end, but happy harmless children, instead of dangerous and degraded ones.

IMPROVEMENTS IN THE OPERATION FOR THE RADICAL CURE OF INGUINAL HERNIA BY THE USE OF SOME NEW INSTRUMENTS AND GOLD-WIRE SUTURES.

BY PROFESSOR IGINIO TANSINI,

DIRECTOR OF THE SURGICAL CLINIC IN THE ROYAL UNIVERSITY OF PALERMO.

IN the operation for the radical cure of hernia the most careful attention to aseptic precautions is absolutely essential. It is an operation of great practical importance and it is now very frequently performed but its success is not rarely endangered by the occurrence of slight suppuration, while if the suppuration is extensive the result is a complete failure. This suppuration is in the majority of cases due to the use of silk or catgut as sutures. Silk is the better material of the two, for it is less readily absorbed and more easy to sterilise than is catgut, but in spite of very careful sterilisation silk is nevertheless found to cause suppuration in a large percentage of cases. Suppuration sometimes occurs early, even within the first 10 days after the operation; sometimes, on the other hand, it is postponed and a perfectly successful operation in which primary union has been obtained is followed by suppuration after the lapse of even six or seven months. In the first case there is at least some risk of failure and relapses are possible, and since the patient's stay in bed is prolonged he is apt to imagine that the surgeon is directly responsible for the mishap.

The circumstance that suppuration may follow healing by primary union, and may in fact not show itself until many months after a most successful result has been obtained, proves that the suture material has either been imperfectly sterilised or that it possesses some property, chemical or physical, which is capable of exciting suppuration or of acting as a focus of infection conveyed through the blood. Relapses are the consequence of this defect, and relapses sometimes occur even after healing by primary union without any remote suppuration. Many attempts have been made to

find a substitute for silk. Silver wire has been suggested and as it is inadvisable for the wire to be left in the wound removable sutures have been devised, but these latter have for good reasons found little favour with surgeons: (1) because they are more difficult of application than are the ordinary sutures; and (2) because if they are removed in 10 or 12 days the support is withdrawn too soon, while if they are left longer in position the duration of the treatment is correspondingly increased. In order that silver wire may have sufficient strength it must be of considerable thickness, and it is then open to the objection that in passing through Poupart's ligament it weakens it materially.

I recommend the use of gold as a material for sutures, for this metal may be drawn into wire which is not only finer than silk but is also stronger and more flexible. With such a wire it is as easy to apply sutures as with silk and it cannot do harm as a foreign body. The suture is fixed by twisting the ends three times and this requires less time than tying a silk suture. Using this suture and the new instruments to be presently described I have performed the radical operation for inguinal hernia within 10 minutes.

In performing Bassini's operation for inguinal hernia, or a modified Bassini, I use thick wire for the deep sutures and much thinner wire for the aponeurosis of the external oblique muscle; for ligaturing the neck of the sac I use the same wire as for the deep sutures and for suturing the sac, if necessary, I use the same wire as for the superficial sutures. The ends of the deep sutures are seized with dissecting forceps and turned into the thickness of the internal oblique muscle; the ends of the superficial sutures, which are very thin, are left as they are. After making many experiments with a view to find the most ductile alloy and the smallest possible size of wire I was at last successful, thanks to the energy and assistance of the firm of Messrs. E. De Amici of Via San Sepolcro, Milan. The cost of the wire may at first sight seem to be high but in actual practice the result is an economy. The gold which remains in the patient's body weighs only from 12 to 60 centigrammes (from two to 10 grains); the ends of the wires can be preserved, re-melted, and used over again. Moreover, the surgeon may rely on there being no suppuration, especially if along with the gold wire he uses my instruments to be described presently. The patient is not kept in bed more than for eight or 10 days, and there is only one dressing in order to remove the sutures inserted in the skin, which sutures may if desired be of silk. Silk, however, is not in itself a cheap material, a good deal is required each time that it is used, and much is apt to be wasted. In order to avoid the necessity of leaving ligatures in the wound I now use torsion for the vessels and I obtain perfect occlusion of them by leaving the artery forceps in position till the end of the operation.

Of late years surgeons have given a great deal of attention to the subject of disinfection of the hands, but there are many points in connexion with it which still remain undecided. Gloves are not always worn. At an operation the surgeon has always more misgivings about the disinfection of his assistants' hands than about that of his own, for he can avoid coming in contact with obvious sources of infection and can choose the day of operation; but, on the other hand, his usual or occasional assistants, from the nature and variety of their occupations, have more difficulty in keeping their hands clean, so that any device which would obviate the necessity for the assistants to touch the wound would be a great step in advance. With the instruments which I have made there is no need for the assistants to touch the wound during an operation for inguinal hernia and the work of the surgeon is also in some degree facilitated. In performing Bassini's operation and other similar operations for inguinal hernia I was often not quite satisfied with my assistants, especially with respect to the retraction of the edges of the incision in the aponeurosis of the external oblique muscle and with respect to the depression of the floor of the wound with a view to the easy application of the sutures. It was also requisite for me to have two assistants, one of whom had a hand fully occupied with retracting the spermatic cord.

I have now been using my new instruments for more than a year. The spermatic cord is intrusted to a hook (Fig. 1) which by its own weight and without being held by anyone keeps the cord out of the way of the sutures, and the handle of the instrument, on account of its curve, remains close to the surface of the body. The edges of the aponeurosis of the external oblique muscle which used to slip from the ordinary