is due to the agency of the wandering cells (leucocytes), which bear the bacilli about in the tissues, and may leave them in any spot whatsoever, being themselves brought to a standstill by their constantly increasing burden. In no single instance of tuberculosis did he find the bacilli absent; the smaller and younger the nodules, the more profuse were the bacilli contained within them, being especially numerous towards the centre. The bacilli appear to be fewer as caseation advances. A somewhat similar testimony comes from the pathologist of the Brompton Consumption Hospital.

The pathology of the past revealed only part of the truth. It told us that the blood in phthisis had a tendency to form and exude cells, which grew, but did not develop into tissue; which died, and caseated, and in this state irritated the lymphatic system generally, and the pulmonary lymphatics in particular. We knew from the time of Laennec that tubercle could be artificially produced in animals by the insertion of tubercular and septic matters beneath the skin. We were able also to distinguish milary tubercles, white granulations, yellow granulations, caseous masses, catarrhal pneumonia, red hepatization, fibrosis, chalky masses, fibrinous nodules, and vesicular emphysema. But we knew how utterly unavailing was all this knowledge to arrest the progress of the malady, and establish the cure. The idea that tubercle originates in any sense from vegetation, belongs to a new and advanced philosophy, and opens up a wide region for speculation and experiment. The fairest and loveliest flowers that ever bloomed on earth are cut off annually, in their thousands and tens of thousands, by this fell and dread disease, in the very pride and zenith of their youth. Very touching is their mute appeal. The stoutest heart amongst us may well quail and tremble, as it sees all that is brightest and most beautiful in life garnered thus early into the silent tomb. All ardently desire to see the veil lifted; the origin of the evil exposed in its naked simplicity; and the angel of death arrested in his ruthless and destroying march. This may not be in our day, but yet there is hope. Very magnificent indeed will be the reward of that man who shall succeed in solving this intricate problem, and removing tubercle from the catalogue of the opprobria.

Passing to abdominal surgery one is tempted to say a word, but on a purely ethical aspect. The brilliant gains in abdominal surgery have been largely due to the impetus given by a few eminent specialists, and must challenge and win universal admiration. But I think we can hardly approve when they tell us (I quote the words) that "no surgeon engaged in constant attendance on the promiscuous cases admitted to a general hospital should perform such an operation as ovariectomy." Such remarks come with a bad grace from gentlemen whose practice must be essentially most promiscuous, for their almost daily work will consist in removing colloid and malignant tumours, suppurating cysts, decomposing hydatids, pyosalpinges, and bodies and organs in various stages of putrescence, and oftentimes in patients actually septicæmic, or suffering from peritonitis and other complications; and yet they are able, by proper expedients, to protect their patients from being injured by this alarming promiscuity. Absolute and perfect cleanliness is the specific expedient required—cleanliness of hands, fingers, nails, sponges, instruments, clothing; cleanliness of water, air, and all surroundings; cleanliness within the abdomen after the growth or disease has been removed, as shown in the complete removal of every trace of extravasated blood, or other fluid, which it may have been impossible to prevent reaching the cavity; and a general nicety and cleanliness in the adaptation of all wounded parts, both inside and outside the abdomen. Cleanliness is the sheet-anchor which protects the specialist against evil resulting from his promiscuous practice, and the hospital surgeon must take it for his defence in the same thorough and exhaustive way, if he desire to excel in the department of abdominal surgery.

I venture to express the hope, when another edition of the excellent work which contains this observation is published, that this paragraph will be expunged. Two considerations convince me that such contention is mischievous to the best outcomes of surgery. The forethought, care, and knowledge, which are so strikingly rewarded by success in abdominal surgery, are quite within the range of work of every good operating surgeon, if he will only be at the pains and trouble to attain them. And, secondly, these very qualifications are so much enhanced by the practice of abdominal surgery, that a corresponding improvement in the all round practice of the surgeon is sure to result. Though he may not succeed in obtaining as high an average of success as a Spencer Wells, Keith, or Lawson Tait, yet the general product of his work will be better, and society at large the gainer. He cannot get good results unless he work upon the best possible plan, be very painstaking, careful as to minute points and every procedure; and thus he will insensibly form habits of the highest value in relation to every department of surgical practice. On this ground, therefore, the

operating surgeon of the general hospital who is willing and able to give his best time, and thought, and personal attention, should not allow abdominal surgery to be wrested from him by any artificial rules for the restriction of practice, and there is no valid reason why he should not achieve as good success as the most distinguished specialist.

To the specialist I would say in all frankness, perfect your art; show if you can cent. per cent. of recovery; still let your motto ever be "Excelsior." It is a great, and, maybe, a very noble ambition. Record your experience very faithfully; detail every minute point upon which you know your distinguished success depends, so that you may guide others with less experience, and prevent their being taken in pitfalls, from which, perhaps, you have barely yourself escaped; but never attempt to reflect on others, either inferentially or otherwise, who, striving to do their best, have not as yet managed to attain to your own high average of success. Thus you will earn a rich respect, and deserve to become *facile princeps* in your own department.

In bringing this too discursive paper to a close, I do not claim to have advanced anything original or new, but have drawn largely from the ideas, observations, and discoveries of others. My aim has been to depict in homely and simple guise, the optimist views on a variety of subjects, of an ordinary general practitioner. As in nature, so here, there are different aspects to every view; one mind prefers the sunshine, another the shade; one loves to roam along the valley stream, another selects the mountain top. Human life is the prospect that surrounds us, with its wondrous mechanism working continually on its life spring without cessation, with the most marvellous accuracy, and perfect adaptation of means to ends. The contemplation of the processes involved in what we know as life and death; the genesis, growth, reparation, secretion, excretion, propagation, and decay; all point to the Master hand that guides, controls, and renews the whole. It is sometimes our high privilege to scan the works of Providence as illustrated in the phenomena of life; to unfold and explain the beautiful design, the perfect mechanism, the chemical mysteries, the physiological harmonies, and the pathological subtleties which constitute the mountain top scenes which are open to the view of the capable and aspiring medical mountaineer. But I have rather preferred the valley as more suited to my years and inexperience, and have laid before you the thoughts and speculations as they arose in my mind on the scattered and disconnected objects which presented themselves in the nooks and bye-ways amongst which I wandered.

If the pictures are true that I have drawn, and the remarks and inferences just, I shall trust to your consideration and kindness to make allowance for the imperfections of the work.

A CASE OF EXTREME OUTWARD ROTATION OF THE LOWER EXTREMITIES, THE HEELS POINTING DIRECTLY FORWARDS, WITH DEFECTIVE DEVELOPMENT OF BOTH KNEE-JOINTS: COMPLETE DEVELOPMENT OF CONTROL OF THE LIMBS.

BY BERKELEY HILL, F.R.C.S.ENG.

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A. T., a female, born August 7th, 1877, a healthy, well nourished child, no rickets, was brought to me on February 14th, 1878, for congenital deformity of both lower extremities. She had also a right biceps cubiti that could not be extended properly; the elbow stopped at 145°. The left biceps was slightly shortened too. There was no nail on either thumb (the paternal grandfather and father had none).

The lower limbs were so everted at the hips, that the heels looked directly forwards (see Fig. 1, taken from a photograph). But the child could rotate them in with help, and bend the thighs to the belly. There was no dislocation of the hips. In the right limb, at the knee, the tibia was rotated outwards, the inner tuberosity rested on the external condyle, and the patella lay on that prominence. A dimple in the skin at the inner margin of the patella marked a fibrous band attaching it to the femur. The tibia and patella could be restored to the natural position. There was no perceptible deformity of the articular ends of the tibia and femur. Flexion of the knee was natural, but the joint could be extended beyond the straight line until the toes touched the belly. There was a general looseness

of movement of the knee in all directions. At the foot, the peronei muscles were somewhat shortened, and the toes could touch the outer side of the leg, while flexion of the ankle was very limited. Still, with help, the child could adduct the foot and flex the toes. The left limb was turned outwards, even more completely than the right

Fig. 1.—A. T., aged 6½ months.

one at the hip. At the knee, the tibia was much rotated inwards, and slipped behind the inner condyle. The patella, very small, apparently of the size of a horse-bean, rested on the inner condyle, and was attached to it by a fibrous band, the position of which was indicated by a dimple. The left foot was everted like the right one.

On February 28th, a pelvic band, with outside irons, jointed at the hips, knees, and ankles, was applied. On March 28th, the tendines Achillis were divided. By April 12th the child could turn her thighs in. On July 20th, boots with side-supports were fitted. On September 21st, both feet were in good position; she could extend the knees and flex the feet thoroughly.

Fig. 2.—A. T., 6½ years old.

1879. February 13th. The patient could walk a little without irons if she held the nurse's hand. The left limb still turned outwards; the ligaments of this knee were still very lax, and also those of the left

ankle. When she walked in irons, she did not usually quite straighten the left knee, but she straightened the right knee well.

May 26th. If the condyles of the femora were fixed and the knees straightened, there was still free rotary motion of the left tibia; the right was less free.

September 17th. The child could walk alone without the irons. There was a slight tendency to knock-knee in both limbs. She seldom or never turned the heels forwards, and she could extend both knees thoroughly.

1880. January 23rd. She ran about anywhere on the flat without help; to go upstairs she required the support of a hand. Without the instruments she could run nimbly. She could point her toes forward, flex and extend the ankles, and rotate inwards the femora at the hips.

May 11th. Both patellæ were easily distinguished; the right was almost normal, the left lay close to the external condyle. The left ligamentum patellæ could not be traced.

July 14th. The left patella was as large as half an almond; it slipped outside of the external condyle at every bending of the knee.

August 24th. All instruments were disused. In October the child went home.

1884. April 26th. The photograph, of which the standing figure is a copy, was taken in March of this year, the child being six and a half years old. Her mother writes: "She is very active; hops and runs with a skip and a jump like other children, and has greatly improved from some dancing lessons she has had." (See Fig. 2.)

This case is an unusually good example of deformity, due, partly, to defective structure of the knee-joints, but, in all probability, also to faulty posture of the fetus *in utero*. It also shows what success may be obtained by carefully training the limbs into natural positions, and accustoming the muscles to normal movements before the child is old enough to have practised them in abnormal ones. Probably the short tendines Achillis, which were cut to allow proper flexion of the ankles, had become so simply from the posture of the feet having been long one of extension and eversion. The child was seven months old when treatment was begun; and when she was two years old she could walk fairly well. It is interesting to observe the complete control maintained over the knees by the muscles, in the probable absence of, or only partial development of, the crucial ligaments and of the ligamenta patellæ. In spite of these defects, the child learned in two years to command her limbs in the ordinary manner, and to be able to run and dance at seven years like other children.

THE ELEMENT OF PAIN IN INTESTINAL OBSTRUCTION.

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In the majority of cases of intestinal obstruction, and in those especially that pursue an acute or subacute course, pain is a grave and prominent symptom. It is commonly the first of the long train of troubles that follows an occlusion of the bowel. Of these, it is usually one of the longest abiding, one of the most grievous for the patient, and one of the most valuable to the surgeon for diagnostic purposes. On the last-named ground, if on no other, the subject is well worthy of some consideration.

The abdominal pain in cases of intestinal obstruction may be due to at least four conditions: 1, direct damage to the peritoneum and bowel, as by strangulation; 2, irregular and disordered peristaltic movements; 3, distension of the bowel above the obstruction; 4, inflammatory changes in the intestine and peritoneum.

1. To the first category belongs the pain that depends upon lesion of the peritoneal and intestinal nerves from sudden compression. The condition is illustrated by a loop of bowel strangulated through a slit in the mesentery, or snared by a solitary band, or involved in an abrupt and severe volvulus.

The pain due to this condition is, without doubt, the most intense that is met with in intestinal obstruction. It is more severe even than that brought about by sudden perforation of the bowel, since in this latter condition collapse so soon appears, and is so soon profound, that pain ceases to be the most conspicuous symptom. In many acute cases of intestinal strangulation, the initial pain due to the sudden snaring of the bowel is most intense. The patients are described as being in "a state of acute agony," as being "bent double," and in several instances as "rolling upon the floor with pain."

The intensity of the suffering in these cases depends upon many