who was killed by an accident convinced me that the former were absolutely normal in microscopical appearance. I have also examined the medulla and supra-renal capsule of the case in which cerebral symptoms developed, but with negative result. The view to which I am disposed to lean is, that the majority of the cases of Graves's disease are examples of a functional neurosis of the sympathetic and perhaps of the associated centres in the cord and medulla (especially the latter). In proof of the functional, in opposition to the organic, theory may be urged the fact of the occasional sudden origin of the disease, the complete recovery in some cases, the sex most frequently attacked, the rarity of the development of the symptoms during pregnancy, the frequent association with other forms of functional nerve-disorder (insanity, etc.), and so forth. I am disposed to think that a weak but irritable and instable condition of the cells of the ganglia of the sympathetic, due to, or connected with, a similar condition of the cord and medulla vaso-motor centres (cardio-vascular), will account for the palpitation as well as for many other phenomena of the disorder. The thyroïdal enlargement is, I believe, a simple hypertrophy in which both the vessels and glandular substance of the organ take part; and I do not think it is straining facts to assume that the hypertrophy is due to this instable and irritable condition of the ganglionic cells, inasmuch as they most probably preside over its nutrition. I remember a case of Graves's disease, in which the thyroid enlarged rapidly in one direction, sending off a bud-like offshoot, about the size of a large filbert, during an attack of tonsillitis. This projection, which was firm and entirely devoid of pulsation, was evidently composed of gland substance and not a simple vascular dilatation; it was interesting to note that during the attack, which only lasted a few days, the eyes stood out much more prominently than before, and receded as the temporary disturbance subsided. The prognosis is more difficult to explain, but I believe it depends chiefly upon these conditions—all of which are responsible for the phenomenon—namely, increase of fat in the orbit, postocular capillary dilatation, and degeneration and relaxation of the recti muscles.

AN ADDRESS ON THE STUDY OF HUMAN ANATOMY.

Delivered at the Meeting held for the Formation of an Anatomical Society, May 6th, 1887.

By PROFESSOR HUMPHRY, F.R.S.

GENTLEMEN,—I fully appreciate the honour you have done me in voting me to the chair on this occasion. The reason for your doing so may be found in the fact that my commencement of the study of anatomy dates from more than half a century ago, during great part of which time I have been a teacher of anatomy; and it is therefore pretty certain that I am the senior anatomical student as well as the senior anatomical teacher here present; and though I have now to a great extent relinquished the study and teaching of anatomy, yet it may be supposed that I still cast lingering looks behind, upon that field in which I for so many years worked happily and earnestly, and I hope not altogether unprofitably.

I appreciate the honour, however, more especially because I feel that this is an important occasion, an epoch it may perhaps be regarded, in the history of anatomy, and an occasion of much importance to the study of medicine generally. We are met together for the purpose of elevating the study of human anatomy, and placing, or endeavouring to place, the science of human anatomy on a level with, and in that proper relation to, the other branches of natural science, which I think it has not for some time held, and which relative decadence is greatly to be attributed to the fact that it has not advanced *pari passu* with them. Since the time of Hunter and Cruikshank and Astley-Cooper and the Bells, human anatomy has lacked its proper interest, and has not held its own with the other quickly progressing branches of natural science. Hence it has come to be regarded as a merely practical subject, and its study to be merely a process of piling fact upon fact without due regard to the purport of the facts and the suggestions to which they should give rise. Far be it from me to disparage the value of anatomy as a practical subject, seeing that in this way it confers the greatest benefits upon humanity, and has, and ever must have, the first and chief claim to our regard. Nor would I disparage the educational benefit resulting from the

acquisition of a clear and accurate knowledge of the structure of the body and the mental training derived thereby, which is of so much value to those who are entering upon the pursuit of medicine. But I feel that the study of anatomy should not be regarded from this point alone, but that a wider and higher view should be taken of it. The human body is undoubtedly the highest and most perfect of created works, the last and most perfect outcome of Nature's laboratory, the central one around which all the rest of the animal world is grouped, to which all point, and which all are calculated to elucidate. It is provided with a surpassing mechanism, great results being produced by slight modifications from the forms of other animals, and the resultants being such acuteness of perception, and such variety, nicety, and precision of movement, as to give man the mastery over all others, and enable him to bend all Nature to his purpose. Moreover, its proportions, the outlines of its form, and the power of expression of its several parts, in both sexes and at all periods of life, are such, and present so much beauty and variety, that it has formed subjects for the highest efforts of the greatest artists of all times, from Phidias and Raphael to Leighton and Millais. Moreover, in it the physical is worked up into that complex and mysterious elaboration and process which enables it to become the organ or agent of the mental and intellectual—the seat of the soul, the abode of Deity. The problems and conceptions—physical, artistic, and psychical—arising out of it, of and associated with this material frame of ours, infinitely surpass, in number and interest, those of all other existing forms.

It may be regarded, therefore, as one of the marvels connected with it, that the study of it should come to be regarded as dull, uninteresting, and profitable only for its direct practical relations with medicine and surgery. Surely it needs only the proper impulses, such as we trust will in part be furnished by the proposed society, to obtain for it a due appreciation and position among the higher and educational sciences. It was this feeling which urged me to contend strongly, and, I am glad to say, successfully, for a place for human anatomy among the natural sciences at Cambridge; and I am convinced that it would be a benefit, vibrating along the whole line of medical education, if at the early stage of that education, the student were accustomed to reflect upon what he sees and reads of in his anatomical course, and to associate thoughts respecting the mechanical and other relations of the structures which he dissects. One of the greatest, perhaps the greatest, defects in medical education, I might say in all education more or less, but in medical education especially, is the heaping upon and oppressing the student's mind with a load of facts which he neither digests nor appropriates, and which he therefore does not retain. His mind is like a sack crammed with grain, which there is little power to fertilise or utilise. Far better would it be to lessen the load, and to substitute the habit and the ability to reflect, and really digest and appropriate the remainder, to give some opportunity for mental elasticity and for that enjoyment of study which results from a real knowledge and appreciation of what is learned. As a general rule, we remember only, at any rate we remember best, that information the bearings of which we have well understood, which has consequently most interested and impressed us, and which we have most enjoyed. To make anatomy better remembered and a better mental training, it must be made more interesting and more attractive and more thought-inspiring; and this is to be done by giving to it its proper scope as a medium of information, and by imparting to its details, which are now too cold and dry and sterile, the warmth and life and thought-budding energy which should belong to them. I have spoken chiefly of human anatomy, because to it these remarks especially apply, and because the human body is the subject of the most serious and arduous study, and the manner in which it is prosecuted is the most important and the most relevant to our purpose. Not that the scope of the proposed society is to be limited to it, but that our greatest opportunities for good will be in relation to it. Anatomy, the anatomy more particularly of the human body, is a very ancient and dignified science, indeed a royal science. It was studied, ages and ages ago, by the people on the banks of the Nile, from whom we have derived so much; and, we were told the other day at Cambridge by my learned successor in the Chair of Anatomy, that the earliest writing upon anatomy of which we have any cognisance was by an Egyptian king who had passed away long before the Exodus took place. It is for us to make it a royal science, in a higher sense, and to give to the human body its proper royalty of position in the animal world, not merely by having regard to the paramount practical importance of its study, but by considering it also in relation to its mechanism or physical physiology, in its relation to embryology, and in its relation to the anatomy of other animals, and also in its relation to the special structural features which may be associated with the

occurrence of certain diseases. The attendance this afternoon shows a general interest in this movement, and argues well for the formation and prosperity of the society, which I trust will prove long-lived and successful. I will occupy your time no longer, for the relation between brevity of life and the length of time, and the value of brevity, in words as well as in action, are becoming daily more manifest in the quickly shifting scenes of this singularly mobile age.

THE ANNUAL ORATION, ON ABDOMINAL SECTION FOR THE TREAT- MENT OF INTRA-PERITONEAL INJURY.

Delivered before the Medical Society of London, May 2nd, 1887.

By SIR WILLIAM MACCORMAC, F.R.C.S.,
Surgeon to, and Lecturer on Surgery at, St. Thomas's Hospital.

[Concluded from page 980.]

ABDOMINAL INJURY WITHOUT EXTERNAL WOUND.

RUPTURE OF THE INTESTINE.

VIOLENT contusion of the abdomen may result in rupture of any of its contained viscera, a condition for which laparotomy has been rarely performed.

In these cases an exact diagnosis must always be very difficult, oftentimes quite impossible to arrive at, as the symptoms are obscure and common to several degrees and kind of injury. Serious hesitation must always occur when we are called upon to decide in the presence of each particular case what is the best line of treatment to adopt. One has seen many cases of severe abdominal injury recover, while many very speedily die.

Numerous instances may be cited to illustrate the fact that the most serious injury is sometimes unaccompanied by any definite diagnostic symptoms. In a case which recently appeared at St. Thomas's, the man, apparently, had no serious complaint. He was a labourer, aged 24. On March 26th, 1887, about 8.30 P.M., he was knocked down while in a drunken condition by a tramcar, driving at the rate of four miles an hour, and wedged between the wheel-guard and the ground. He vomited repeatedly after the accident; when seen at the hospital one hour later he could not answer questions coherently, was restive and quarrelsome, the pulse full and quick, respiration hurried; there was no symptom of collapse, no distension or tenderness of the abdomen. After being carefully examined he was able, with some assistance, to put on his clothes, and, on being discharged, was taken to a police-cell. During the night he vomited frequently, and the bowels acted once; he was very noisy, but expressed himself as feeling "all right;" in the morning he complained of pain in the epigastrium, but was able to bail himself out, and walk away from the police-station. One hour later he became much worse, with severe abdominal pain, and died of peritonitis the same evening, twenty-four hours after the accident. At the necropsy a rupture of the lower part of the duodenum, with extravasation of its contents, and a slight rupture of the liver were found.

In 1872 a corpulent man walked a considerable distance to the London Hospital, after falling in a brewery some sixteen feet, and striking his belly in the fall. There were no symptoms throughout his illness referable to abdominal injury. He complained only of pain in the chest, and, being considered fit to attend as an out-patient, was sent home. Soon after he returned to the hospital, and died in about twenty hours. At the *post-mortem* examination a complete circular division of the bowel was found at the junction of the duodenum and jejunum, and a fracture of the sternum.

At the Leeds Infirmary a man, aged 19, was admitted in 1881 in a drunken condition; the wheel of the cart he was driving had passed over his abdomen. There was no evidence of external injury, and the man had been able to remount his cart and drive a couple of miles into the town. There were no symptoms of collapse, and he vomited a few

ounces of clear fluid, smelling of beer. On the following morning he said he felt "quite well." There was no abdominal tenderness, nor had any blood passed by the bowel. He was then given some bread and milk, and almost directly after abdominal pain set in, and death occurred from peritonitis twenty-seven hours after admission. On *post-mortem* examination, the jejunum was found completely divided transversely, exactly where it lay upon the vertebral column. It is not stated if extravasation took place.

Such cases, and others might easily be quoted, illustrate the fact that nothing positively indicating a serious intestinal lesion may show itself for some time. Nevertheless the fatality of concealed lesion of the intestine is so great that since the beginning of this century the idea of intervention has occurred to many surgeons. In France, Jobert and Baudens urged interference as soon as the symptoms of peritonitis were declared. Bouilly, in 1883, seems to have been the first to operate on a case of this kind. There have been seven or eight cases altogether which are recorded in the table, including the one already detailed of Mr. Croft, fatal unfortunately in every instance.

SYMPTOMS AND INDICATIONS FOR OPERATION.

The chief indications for operative interference are afforded by the mode of action and severity of the violence. The presence of prolonged and profound shock—the duration of the shock is of greater importance than its intensity—a small and quick pulse, and hurried respiration, while the temperature remains either normal or subnormal, associated with acutely severe, persistent, and localised pain, increased on pressure, indicate the nature of the injury; bloody vomit or stool, rapid tympany, the evidence of percussion, are inconstant signs, and help us but little.

The jejunum and ileum are the portions of intestine most frequently ruptured, and the rent will generally be found just behind the part of the abdomen which has been struck—a fact which can easily be verified by experiment. In about 15 per cent. of the cases, more than one loop of intestine is damaged, and in that case the injury generally occurs in superimposed coils.

It may be affirmed that there is no constant pathognomonic sign of rupture of the intestine. It is difficult at first to distinguish the syncope induced by hæmorrhage from the shock caused by a ruptured intestine. In some cases, as we have seen, there appears to be little or no shock.

In the early period we shall have to arrive at a diagnosis from the nature and violence of the injury, and the general condition of the patient. When peritonitis is declared, an immediate operation is urgently indicated, as collapse comes on very quickly, sometimes very suddenly, and a few hours' delay may negative all prospect of recovery.

TREATMENT.

Chavasse, from a collection of 150 cases, estimates the mortality of rupture of the intestine without external wound at 96 per cent., a fatality probably below the mark, but at all events one justifying any operative proceedings affording even a moderate prospect of success. Chiefly, no doubt, on account of the obscurity and difficulty attending these cases, abdominal section has been very rarely performed. Absolute rest has hitherto been the chief indication for treatment. But cases do arise in which abdominal section should be practised, and an attempt made to discover and deal with the visceral wound, arrest the bleeding, and clear away the clots and extravasated blood.

We should interfere when we possess a reasonable belief that the intestine is ruptured. We may in some cases properly propose laparotomy as a means of diagnosis, and, indeed when intestinal rupture is suspected the operation should be performed at once to afford a good prospect of success. Exploratory laparotomy has no very serious inconvenience, and should be adopted in those cases where there are reasonable grounds for believing the intestine has been damaged, as in no other way can effective assistance be rendered to the patient. At a later period we have not only the ruptured intestine to deal with, but a septic peritonitis, which produces the most profound depression, and often necessitates an undue curtailment of some essential step in the operation, or occasions the death of the patient before its completion. Extreme collapse, a long interval from the time of the injury, or severe co-existing damage to the spleen, liver, or pancreas, of course contra-indicate operation. The incision should be made in the middle line in all cases, and at the level which will afford readiest access to the seat of the injury. It is desirable to make it long enough to permit the surgeon to reach without difficulty every part of the interior. According to circumstances he may then decide to suture the intestinal wound, resect the injured portion of the bowel, or make an artificial anus. The same objections hold in regard to the latter that obtain in respect of artificial anus after gunshot injury. Where