right membrana tympani was fissured in its upper half (see Fig. 3) behind the handle of the malleus. Much hæmorrhage had taken place under the pia mater into the cortex of the brain on the lateral and under surfaces on the right side.

Fig. 1 shows the outline of the vertex, and the dark lines the course of the fissures.

Fig. 2 shows the base of the skull.

Fig. 3 shows fissure in the right membrana tympani.

Fig. 5.—The left tympanic membrane showing two vertical slits. They are triangular, with the base at the periphery of the membrane.

CASE II. Compression of the Brain from Ruptured Meningeal Artery. Two Rents in the left Membrana Tympani.—November 10th, 1889, a man, unknown, aged about 55, was found insensible in the street, and when first seen was unconscious, livid in the face, and snoring. The pulse was 72, full and bounding. The corneal reflexes were absent. The left pupil was fully dilated, and did not react to light. The right pupil was contracted. Bright red blood was running from the left external auditory meatus. It was thought advisable not to attempt any operation, and the patient died in nine hours.

Necropsy.—There was no wound of the scalp, but a contusion of the posterior half of the left temporal muscle. On opening the skull a large soft blood clot was found on the left side between the dura mater and the bone, extending towards the base of the skull as far as the squamosal suture, and behind to the groove for the lateral sinus. The greatest thickness of the blood clot was three-quarters of an inch. The anterior branch of the middle meningeal was torn near the anterior inferior angle of the parietal bone. A fissured fracture extended from the lower part of the left parietal bone to the base of the skull, through the squamous and anterior surface of the petrous bone to near its apex. The roof and the floor of the tympanum were fissured, and the entire thickness of the petrous bone was involved in the fissure mentioned above.

The two diagrams (Figs. 4 and 5) give a fairly accurate idea of the fissures of the tympanic membrane, and of the course of the bony fissure.

Fig. 4.—Fissure of middle fossa of skull.

I would submit that systematic examination of the ear in head injuries will give much assistance in clearing up the nature of the injury; for example, in the case of hæmorrhage into the lower part of the tympanic membrane adverted to at the commencement of this communication, though the man was brought to the hospital with no history, and insensible, I was able, by examining the ear, to state positively the manner in which the injury had been inflicted.

CASE OF PERFORATIVE ULCER OF STOMACH TREATED BY LAPAROTOMY, STITCHING, AND WASHING OUT.

By R. H. BOURCHIER NICHOLSON, M.R.C.S.,
Surgeon to the Hull Royal Infirmary.

J. L., aged 32, married, one child, was admitted to the Infirmary on October 27th, at 6 P.M., suffering from acute pain in the epigastric region, and in a very collapsed condition.

My colleague, Dr. E. O. Daly, diagnosed ruptured ulcer of the stomach. There was acute pain over the left hypochondriac region, loss of liver, dulness, and some general distension of the abdomen. After consultation with the staff, the first shock of the perforation having passed off and the patient having rallied somewhat, I decided, three hours after the supposed rupture of the ulcer into the peritoneal cavity, to perform laparotomy, stitch up the ulcer if found, wash out the peritoneal cavity, and drain. Ether having been administered by Dr. Waters, the assistant house-surgeon, the first incision, 5 inches long, was made above the umbilicus in the median line. On opening the peritoneal cavity there escaped a large quantity of flatus; this distended the peritoneum and made the opening of it less difficult. I drew the stomach into the wound without much trouble, and was guided by the escaping fluid contents to the anterior and upper surface very near the entrance of the œsophagus; in fact, so near that I could readily detect the perpendicular muscular fibres of the œsophagus entering the stomach walls. The opening was the size of a goose quill. It had clean-cut edges and was the centre of an area of thickened walls, about $1\frac{1}{2}$ inch in diameter. I kept my left forefinger over the opening to prevent further escape of stomach contents—which, by the way, was apparently nearly empty—and after thoroughly cleansing by pressing the ulcer and its surrounding hardness backwards and drawing some of the stomach up I was able to double the surface inwards, so bringing the two healthy peritoneal surfaces together by infolding. Then when these were fixed by eight Lembert's stitches, I again, with a continuous suture, brought the two surfaces together external to the first row of sutures.

The next step, and the most important, was the toilet of the peritoneum; this was performed by washing out with a douche, using boiled water at a temperature of 105° to 110° .

This was carried out, with the assistance of my colleague Mr. Evans, most satisfactorily.

Lastly, for drainage purposes, I made an incision 2 inches long below the umbilicus and just over the pubes. More gas escaped; and, after again washing out from below most thoroughly, I inserted into Douglas's pouch a long glass drainage tube, which we could empty by syringe and tube, still washing with the boiled water until the fluid came away quite clear. The patient rallied directly the washing-out process, which acted as a stimulus, commenced. As it was thought that the method of suturing in layers, which I prefer, might be too tedious and exhausting to the patient, I closed the wounds with deep sutures and a few superficial ones. The wounds were dressed with iodoform gauze and absorbent wool, and the patient was ordered to be fed by rectum with peptonised milk and brandy every four hours.

On October 28th the pulse was 76, and the temperature 97.4° F. She had slept fairly, and had had no sickness. The enemata were well retained, and she had no pain. At 9 P.M. she had a little hiccough and slight cough, and was ordered liquor opii sedativi π ij every three hours if required. Only one dose was given.

On October 29th the temperature was 97.6° F., and the pulse 120. The cough was a little better. The respirations were 30. She had no pain, but suffered from slight sickness.

On October 30th the patient was quite comfortable; no vomiting; hiccough troublesome at times; slight headache. Had enemata every four hours; no pain after them; bowels open once slightly at 6 A.M. Temperature 97.2°, pulse 114, respirations 22. During the day I ordered half-pint injections of warm water between food. Enemata were given on account of the great thirst; at 10 P.M. sleeping quietly.

October 31st. She had a quiet, comfortable night; no vomiting and very little hiccough. Temperature 98.6°, pulse 102, respirations 20. Removed drainage tubes; wounds almost healed.

REMARKS.—To the position of the ulcer, which was fairly fixed by its surroundings, I attribute in some degree the comparative ease with which I was able to command the walls of the stomach.

OPENING OF THE MEDICAL SCHOOLS : INTRODUCTORY ADDRESSES.

UNIVERSITY OF GLASGOW.

THE INAUGURAL LECTURE OF THE CHAIR OF PATHOLOGY.
FUNDAMENTAL CONCEPTIONS AS TO THE CHARACTERISTICS AND EMBODIMENTS OF LIFE, WITH
SPECIAL REFERENCE TO PATHOLOGY.

By Professor JOSEPH COATS, M.D.

[DR. COATS, in giving his inaugural lecture as first Professor of Pathology in the University of Glasgow, observed that the delay in the foundation of the Chair had not been an un-mixed evil, since it had given time for circumstances to consolidate the duties of systematic lecturing and those of pathologist to the Western Infirmary, the great field of clinical and pathological observations for the students of the University, and had ensured that in the future the two offices would remain united. The directors of the Western Infirmary had shown an enlightened interest in the promotion of the study of pathology by making arrangements for the erection of laboratories in which both the University and the Infirmary had their parts, and where not only educational classes would be given, but where facilities would be afforded for original research. To the University Court the duty of founding and endowing Research Fellowships had been confided by the University Commissioners. He was convinced that much of the future of the Glasgow School would depend on the manner in which the Court carried out this trust. Dr. Coats then referred to the importance of the study of comparative pathology, and suggested that it would be a worthy action if one of the great societies which represented the owners of live stock would

come forward and endow a scholarship or lectureship on this subject.

Dr. Coats then proceeded to the main subject of his address, from which we extract the following paragraphs:]

IRRITABILITY THE TEST OF LIFE. GLISSON, HALLER.

Whilst the nature of life eternally eludes our search, and is thus insusceptible of definition, there are certain characteristics of living structures which may be used as tests of the existence of life. Of these, the quality commonly called irritability is the most notable. This term, which was first applied to muscle, is now used to designate the fact that each living structure is capable of being brought into some kind of action by the application of a stimulus from without. Just as muscle contracts on the application of a stimulus either directly or through the nerves, so all living structures are capable of some kind of action on the application of the proper stimulus.

The earliest use of the term "irritability" is to be found, I believe, in the works of Francis Glisson, an Englishman, who was born in the year 1596 and died in 1677. This modest observer, whose name is enshrined in the so-called capsule of Glisson in the liver, seems first to have suggested the view that muscle contracts on the application of a stimulus by means of its own inherent powers, a characteristic of muscle which he designated "irritability."

This term, however, is much more commonly identified with the name of one who lived a hundred years later, the brilliant Swiss observer, Albert Haller, a man pre-eminent not only in the severe walks of science but also in the brighter paths of poetry. Haller's services to biology were doubtless very great. They are embodied in his great work on Physiology, written in Latin and published at Lausanne in the year 1757, in eight quarto volumes.

Haller very clearly expressed the conviction that muscles contract by virtue of a power inherent in themselves, and this inherent force he called *vis insita*. He recognised most distinctly that, although the contraction of a muscle follows the stimulation by a nerve, yet that the power of the nerve is different and separable from that of the muscle. He shows, also, that this *vis insita* of muscular fibre may be excited by other influences besides the nerves. Thus, "it is excited both by the touch of a sharp instrument, and, in the hollow muscles, by inflated air, by water, and every kind of irritant, but more powerfully by electricity than by any other stimulus."

But yet Haller did not carry his conception of irritability beyond muscles and other contractile structures. His views were much discussed in his time, and much opposed. Amongst his most redoubtable opponents were Robert Whytt, who became Professor of the Theory of Medicine in Edinburgh in 1747, and William Cullen, a contemporary of Haller, who was Professor in this University, first of Chemistry and then of Medicine, going afterwards to Edinburgh. His conceptions of the animal body are a retrogression as compared with those of Haller. In his *Institutions of Medicine* (1772), Cullen distinguishes two kinds of solid parts in the body, one whose properties are the same in the dead as in the living, and the same in the animate as in many inanimate bodies; the other, whose properties appear only in living bodies. The one he calls "simple solids," and the other "vital solids," and the latter he regards as the fundamental part of the nervous system. Cullen was very familiar with Haller's views of muscle and the *vis insita*, and was opposed to them. He calls the muscles the "moving extremities of the nerves," and regards the nervous force and the muscular force as one and the same thing. His view seems to have been that the nervous power, taking its origin in the brain, flows into the muscles; a portion of this power is always in the muscles, and the excitement of the muscular fibre may be increased by an addition of more nervous power. He regarded, therefore, the muscular power as dependent on the nervous, and as not different from it. Indeed, he seems to have regarded both of these powers as "having a constant dependence" on the brain, which he took to be the seat and source of the animal power.

JOHN HUNTER ANTICIPATED THE MODERN STANDPOINT.

From Cullen we pass at once to John Hunter, whose views