demics, which in ancient times would have been attributed to occult influences, are now traced to polluted water and tainted milk. The great Sydenham, sagacious as he was, did not look around him, but beneath him, for the origin of epidemics. He thought that they emanated from the bowels of the earth, *interiora terra viscera*. But now we have learned by closer observation to find their origin in our immediate surroundings. The physician has two duties in each case of communicable disease. He has to cure his patient, trace the origin of the disease, and prevent its recurrence among others. This is a noble and an unselfish duty; and in its performance will disappear those relics of prejudice against the medical profession which still linger in society, and find its most obvious expression in his relations to the public service. Take an instance. What utter unreasonableness there is at the present moment in the manner of conducting the crusade against vivisection. That there has been unnecessary indifference to animal suffering in experiments made on living animals, especially in foreign countries, is no doubt true; and the truth justified attempts at legislation, so as to conduct experiments with the view of obtaining the scientific object of the investigation in the most humane manner. In concert with Darwin, Huxley, Burdon Sanderson, and others, I tried to frame a code of morals which might be accepted by physiologists as an example of the manner in which such experiments should be conducted; for I fully recognised the fact that the law would be powerless to restrain such operations, if it were so severe and unreasonable as to drive the operators to perform them in privacy. No system of inspection, no registration, would enable the law to discover individual experiments performed in private, if it were the interest of the experimenter to conceal them. If the law for restraint of cruelty is to be operative, it must be so fair and reasonable as to enlist the sympathies and co-operation of humane men of science. Without this, you might as well expect an experimentalist to publish the contortions of a frog under a scalpel, as you would suspect the keen fisherman to tell the Society for the Prevention of Cruelty to Animals how a frog writhed when placed on a hook, in order to catch a pike. But a reasonable law to regulate the conduct of such experiments would be accepted as a guide, and would find co-operators in the experimenters. It would do more, because the community of science is great; and a law which did not obstruct science, but still prevented cruelty in its pursuit, would soon be accepted by foreign nations.

The very power which we possess over the lower animals involves a responsibility in its exercise. It is no justification of the voluntary infliction of animal suffering that Nature itself is cruel, and that the support of life is incident to death and suffering. If Nature were far more red-handed than she is, if the suffering which we are compelled to inflict on animals daily and hourly were, as it probably is, a hundred or a thousand times greater than the physiologist ever perpetrates, that does not lessen his responsibility to avoid the deliberate infliction of pain in the prosecution of his researches. His very knowledge of the structure of animals is an additional reason for applying his skill to avoid the unnecessary production of pain by all the means which the progress of science gives him to carry out painless operations.

I need scarcely say that I do not agree with those who would prohibit vivisection, even for the purposes of scientific investigation. Medicine is no longer confined to the records of symptoms and to the trials of remedies to alleviate them. The investigation of vital phenomena by observation and experiment is rendering medicine a science which, like all other sciences, requires a direct and careful questioning of Nature. It would be disastrous to the progress of medicine if we were to restrict the means of research in the sciences of anatomy, physiology, or even chemistry by refusing to discoverers in these sciences the power to test their discoveries on living organisms. It is a mean view of scientific progress always to put the *cui bono* test to every experiment, though every discovery, however remote may appear its practical application, becomes ultimately beneficial to man.

Harvey had higher objects than the practice of medicine in discovering the circulation of the blood. Haller inquired into the nervous system, not with a view to the mere cure of disease, and was followed by Bell, Marshall Hall, Weber, Bernard, Brown Séquard, and many other physiologists in a spirit of abstract philosophical inquiry, though all their experiments have ultimately reflected great benefit on the human race. The suffering and death which they inflicted on the lower animals in their researches have, like the sacrifices of old, brought collateral benefits to humanity. It is not in the more direct application of such experiments to the cure of disease, as when Jenner vivisected animals to produce vaccination, that the benefit of such experiment is greatest. These are immediate and palpable benefits which come home to the vulgar; but the widening of the boundaries of knowledge always produces increased power and happiness to the human race.

It is right, in my opinion, that experiments leading to such important

results should be pursued, even at the sacrifice of a certain number of lower animals. But no suffering and no sacrifice should be made without justification. The very fact that the ultimate consequences of such researches lessen the amount of human suffering, by teaching us how to alleviate disease, renders it more imperative that all the resources which modern science has placed at our disposal for the mitigation of pain, should be used in experiments on the lower animals. It is fortunate, then, that in the agitation of the public mind on this subject, nothing precipitate has yet been done, and that a Royal Commission, which is likely to be presided over by Lord Cardwell, a very humane, but at the same time, a prudent and sagacious nobleman, who fully appreciates science, is appointed to inquire into the whole subject.

But I find that I have been giving you somewhat of a Parliamentary speech, so I must conclude. In taking leave of you, I congratulate all the students of this important medical school in the choice of their profession. It is one in which they may be eminently useful to their fellow men; and in this feeling of usefulness, through intelligent labour, they will find their highest and purest enjoyment. I have tried to show you that your knowledge may be made to extend benefit far beyond your immediate patients, for a physician should look upon medicine as a sort of religion, and on himself as a priest of humanity, bound to spread his sphere of usefulness to all within his range.

A CASE OF VARICOSE ANEURISM OF THE LEFT ORBIT, CURED BY LIGATURE OF THE DISEASED VESSELS.

By F. P. LANSDOWN, M.R.C.S. Eng.,
Senior Surgeon to the Bristol General Hospital.

My patient, Mr. H., was wounded at the inner side of the left upper eyelid by the bursting of a soda-water bottle while he was in the act of stooping and opening a hamper. Being on the spot, I saw him at once. The wound penetrated the upper lid; it was about half an inch in length. The eyelids were distended to their utmost by effusion of blood into their cellular tissue, and an artery was jetting blood from the wound. I brought the edges of the wound together with a suture, which stopped the bleeding; and, in a few days, he was apparently well. In about six weeks, however, the eye gradually became prominent, the eyelids swollen, and the veins of the conjunctiva tortuous and distended. In a few weeks, a small pulsating tumour was discerned at the inner angle of the orbit, beneath the cicatrix of the old wound. There was a distinct murmur heard over this, as well as over the eye. The sight was perfect. Rest was enjoined, and remedies used to restrain the circulation. Pressure was applied to the little aneurism by means of a truss, hoping to compress it against the inner wall of the orbit; but, as this gave rise to much pain, and pressed the tumour into the orbit rather than arrested the pulsation, it was discontinued. About this time, he saw Mr. Bader and Mr. Higgins of Guy's Hospital; and, from the fact of the retinal veins being as dilated as the superficial veins, Mr. Bader considered it probable that there was an aneurism deep in the orbit, and advised ligature of the carotid. I preferred trying an exploratory operation. Accordingly, on February 18th, 1874, I cut down and opened up the old wound, exposing a small globular pulsating tumour, with a large tortuous vein coming off from the front of the sac, and passing to the back of the orbit. Between the eye and the aneurism, there were several smaller vessels going to and surrounding the sac, which made the operation tedious. Having found the feeding vessel, I placed a carbolised ligature on the cardiac and distal sides of the aneurism, and closed the wound. On the fourth day, the sac was discharged from the wound. In a week, the eye had returned nearly to its natural level, and my patient made a steady and complete recovery. Now, more than a year since the operation, no one could notice any difference in his eyes.

REMARKS.—I send this case, as showing that dilatation of the ophthalmic vein may simulate deep-seated aneurism in the orbit. Here a communication between the nasal artery and vein was sufficient to produce a considerable deformity. In its general characters, it appears to resemble the case brought before the Royal Medical and Chirurgical Society by Mr. Rivington (BRITISH MEDICAL JOURNAL, March 27th). I may say that, had the operation failed to cure, it was my intention to excise the globe, which, in my opinion, would be a much more satisfactory and a less hazardous operation than ligature of the carotid which should only be done as the last resort.