

had any reason to expect; to use his own words, "So sudden and complete was the resuscitation, that the animal seemed rather to awaken from sleep than arise from apparent death."

That this operation has been the means of saving life, which would otherwise have been lost need hardly be insisted on.

The Hunterian operation for the cure of aneurism was the direct result of vivisection, obtained about the year 1785, by John Hunter, while conducting an experiment on a stag, the external carotid of one side having been tied, in order to see the effect upon the growth of the antler of that side. Contrary to his expectations, no derangement in the nutrition of the antler took place; and on killing the animal and carefully injecting the vessels, he found an abundant and well-developed collateral circulation, entirely obviating any deleterious effects which might have been expected from the ligation of so important an artery. Hunter very soon put this discovery to the test, operating upon the human subject, with such success that the treatment of aneurism became at once and completely freed from the ineffectual barbarities which had previously characterized it, *e. g.*, amputation of the limb and laying open of the sac.

While this branch of surgical art was still in its infancy, those who attempted the ligation of important vessels, were not satisfied to risk the lives entrusted to them until they had demonstrated to themselves the practicability and safety of the operation. Among these may be cited the names of Sir Astley Cooper, Abernethy, Travers, Jones, and Freer.

By experiments upon animals it was found that the twisting of the open mouths of cut vessels arrested the flow of blood from them, and by repeated and extensive experiments, the great value of torsion was fully established.

We all read with interest the reports of observations, involving the removal of

portions of the intestine or stomach occupied by incurable or malignant disease. Such an operation would have been looked upon with horror and amazement by those who had not had the advantage of witnessing the experiments of Shipton and Travers. The success which has already attended these operations in the hands of Billroth, Czerny, Wölfler, and others, is sufficient recommendation to their performance, especially when we consider that the patient has no other alternative of escape from a certain and speedy death.

The production of gastric fistulæ in dogs rendered possible the carrying out of the operation by Czerny, of Heidelberg, in the case of a young woman, in whom the œsophagus had been destroyed by disease. There was nothing before her but a slow and lingering death, which would undoubtedly have taken place had not the knowledge gained by Vivisection stepped in and guided the hand of the surgeon. The result was a perfect success; the woman rapidly gaining strength and weight after the operation, and is now, in every respect, in the best of health.

Having looked at a few of the results of vivisection, and seen what an important part they bear on everyday practice, it may be asked, upon what grounds do the anti-vivisectionists base their opposition? About four or five years ago, when there was considerable agitation in reference to vivisection, a large number of articles and letters appeared in the different magazines and daily papers; the greater part of these letters demanded the total abolition of what they all styled a barbarous and inhuman practice. Many, it need hardly be said, were the ludicrous explosions of ignorant sentimentality; others came from surgeons; a series of letters to one of the London daily papers originating from a London surgeon may give us an idea as to the general tenor of the rest.

Speaking of those who perform experiments upon animals, he says;—