Glasgow Eye Infirmary since January, 1880, of which four were done by myself, the others being done by my colleagues. All these cases were successful except in one case, where the raw surface on the ball was covered with transplanted tissue, and the lid left to granulate. In the process of cicatrising, shrinking of the eyelid took place to such an extent that another operation will be necessary.

The excellent operation for symblepharon by transplanting flaps of conjunctiva from the immediate neighbourhood, or from the sides of the eyeball as performed by Mr. Teale, is suitable in the cases where the tissues have been only superficially destroyed, and where the union is narrow, and does not widen out too much towards the sulcus.

In the severer cases, where a large surface requires to be covered, sufficient conjunctiva is not always obtainable to cover the raw surface on the ball; and even where this has been fairly managed, and the raw surface on the eyelid left to granulate and cicatrise, so much shrinking and puckering of the eyelid takes place from cicatricial contraction, that in many cases, after some time, the deformity has not been much benefited. In such cases the eyelid usually gets fixed to the ball in the sulcus, and from shortening through atrophy, and retraction of the lid towards the adherent part, the displacement of the original attachment of the eyelid to the ball is nearly all that can be said to have been accomplished. I thought that if it were possible to cover the raw surface on the eyelid with mucous membrane from the lip, not only would a mucous surface be next the eye and act as a conjunctival lining, but it would also give support, and, to a great extent, prevent the puckering and shrinking of the eyelid, with incurvation of eyelashes from cicatricial contraction, a condition more likely to ensue if the burn has penetrated any deeper than the conjunctival lining. I had already in several cases tried transplantation of human conjunctiva, and also of conjunctiva from the rabbit, but in none of these cases was the result so satisfactory as could be desired.

Mode of Operation.—The operation is somewhat tedious to be accurately carried out, but, except in very timorous patients, chloroform need not be administered; it may, however, be given when separating the eyelid from the eyeball, as this is somewhat painful; but a 4 per cent. solution of cocaine instilled upon the parts while incisions are being made does much to render the operation less painful. The eyelid should be dissected from the eyeball until the ball moves freely in all directions. The division being completed, and all bleeding arrested, the raw surface on the ball should be covered with flaps of conjunctiva, either from the immediate neighbourhood or from the sides of the ball. An estimate of the size of the raw surface on the eyelid should then be made and mapped out on the inside of the patient's lower lip, below the angle of the mouth, taking care to have it rather large (about a third larger) to allow for subsequent shrinkage; this piece should be dissected off, which may be readily done with scissors, and after carefully cleaning away the labial glands, fat, and submucous tissue, the graft should be carefully transferred to the raw surface on the lid, and secured by a few stitches. During the operation a 1 to 5,000 solution of bichloride of mercury should be used to clean the parts. The eyelids after the operation are closed, and boracic lint applied as a compress. The lids should not be opened for from twenty-four to forty-eight hours.

The following is an abstract of the reports of four cases taken from the Glasgow Eye Infirmary journals.

CASE I.—May 15th, 1880. J. T., aged 26 years. Six months before the inner portion of eyelid and neighbouring conjunctiva were burned with caustic soda solution, which has caused extensive symblepharon. Nearly a half of the lower lid is adherent to the eyeball, the adhesion extending from a little over the corneal border to the sulcus. Movements restricted, eye watery. The eyelid being dissected from the eyeball, flaps were obtained from the neighbouring conjunctiva, and united by stitches across the raw surface on the globe. A piece of mucous membrane was obtained from the patient's lower lip, and stitched on to the raw surface on the eyelid, extending down to the sulcus. Dry boracic lint applied, and eyes covered with a bandage. May 22nd, 1880. Transplanted tissue united, stitches removed, ball moves freely. September 8th, 1880. Movements perfectly free, symblepharon quite overcome. Transplanted tissue looks redder than the neighbouring conjunctiva, otherwise it could not be distinguished.

CASE II.—March 19th, 1881. W. M., aged 33 years, was struck on the left eye by a piece of hot metal four months ago. A symblepharon has formed, which occupies fully one-third of the lower

lid, and extends from the corneal border to the sulcus. The eyelid having been separated from the eyeball, one large flap of conjunctiva was taken from the outside of the globe and made to cover the raw surface on the eyeball. A piece of mucous membrane from the patient's lower lip was stitched to the raw surface on the eyelid. Dry boracic lint applied, and eyes bandaged. March 26th, 1881. Transplanted tissues united, eyeball moves freely, vision improved.

CASE III.—July 15th, 1882. W. L., aged 21 years. A large symblepharon occupies the middle portion of right lower lid, the result of a burn from hot metal. The adhesion being divided, the neighbouring conjunctiva was displaced to nearly cover the bare surface on the globe, and the raw surface on the lid was covered with mucous tissue from the patient's lower lip. July 22nd, 1882. Tissues united, no watering, vision improved, eyeball moves freely.

CASE IV.—February 16th, 1884. W. C., aged 20 years. A symblepharon occupies inner third of right lower lid; a small part of tarsal border of upper lid is attached. The attachment of upper lid separated, and symblepharon divided, bare surface on eyeball nearly covered by drawing conjunctiva over by stitches, surface on eyelid covered with mucous membrane from the lip. February 23rd, 1884. Tissues united, movements free.

The above cases clearly show that mucous membrane from the inside of the lip may be transplanted to the eyelid to replace conjunctival membrane, that it unites readily with the surrounding tissue, and that mucous membrane from the lip is suitable as a conjunctival membrane, and does not irritate the cornea. The operation is advisable in cases where the symblepharon occupies one-third or more of the lid, and especially in the cases where the sulcus is much involved, and in cases where only little conjunctiva can be obtained.

CIRRHOSIS OF THE LIVER IN THE DOMESTICATED ANIMALS.

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If, as has been erroneously stated, cirrhosis of the liver were unknown in the lower animals, or, rather, if we were justified in asserting that cirrhosis of the liver does not occur in the lower animals, the field of inquiry regarding the causation of that lesion in man would be materially narrowed. Unfortunately, however, for any guidance that might thus have been afforded to human pathologists, cirrhosis of the liver is by no means confined to the human species. The only lower animals to whose pathology so much attention has been paid that one would be justified in predicating the non-occurrence of any lesion in them, are our common domesticated quadrupeds, and in all of these cirrhosis of the liver is known to occur. Among the domestic ruminants hepatic cirrhosis is very frequently encountered, but in them the condition in the great majority of cases is due to the presence of the distoma hepaticum, or common liver-fluke, in the bile ducts. But even among ruminants the lesion is found quite independent of parasitic irritation.

The disease occurs also among the domestic carnivora, and in the pig; but, apart from the parasitic variety, the horse appears to be more frequently the subject of hepatic cirrhosis than any of the other domesticated animals.

In certain regions in Germany there prevails a fatal enzootic affection of horses, in which the only constant organic changes are marked cirrhosis of the liver and dilatation of the stomach. This affection is known locally as "Leberverhärtung," from the constancy of the hepatic cirrhosis, and as "Schweinsberger Krankheit," from one of the districts in which it is most prevalent. The symptoms are those of gastro-intestinal disturbance, with progressive emaciation; and sometimes rupture of the stomach is the immediate cause of death. After a variable period there is generally more or less jaundice, but that may be absent. German veterinary surgeons ascribe the disease to the continued action of some vegetable irritant in the fodder, to the bad quality of the hay, or to feeding with hay without a due proportion of oats. In this country no such enzootic occurrence of liver cirrhosis has been observed, but in probably every district occasional cases are to be met with.

All the cases that I have observed have been in animals of at

least middle age, and in none of them was the disease diagnosed during life. In most of the cases, unfortunately, the history of the animal could not be traced for more than a short period before death; but in one instance, of great interest as regards the form and extent of the cirrhosis, there was a clear history of the horse for a period of six years prior to death.

Fig. 1.—Section of cirrhotic liver of horse ($\times 80$). 1. Remains of a lobule completely surrounded by the new connective tissue. 2. Liver cells at the margin of a similar lobule. 3. Plexus of small bile ducts. 4. A small bile duct in transverse section. 5, 5. Small bile ducts penetrating between columns of liver cells. 6. Compressed and atrophied liver cells. 7. Finely fibrous new connective tissue. 8. A small artery cut obliquely.

In this case the liver was almost double the normal size, and its capsule was smooth and not sensibly thickened. The minute structure of the change is depicted in Fig. 1, from which it will be observed that the lesion is of the variety known as "biliary cirrhosis" in human pathology. The most interesting histological feature of this liver is the very abundant formation of small bile ducts in the new connective tissue. This horse had been in the possession of the Edinburgh Street Tramways Company for about six years, and it had during the whole of that period been regularly at work. Its general health was always good, and it never was under veterinary treatment until the fatal illness, which lasted five days.¹ Curiously enough, the immediate cause of death was rupture of the stomach, thus recalling the German enzootic cirrhosis previously referred to. There was no ascites in this case, and there was no appreciable jaundice.

The history of the animal is interesting, as it shows that extreme cirrhosis of the liver may be due to far more subtle causes than the prolonged and excessive consumption of alcohol. In this case, indeed, it seems scarcely possible to believe that the quality of the aliment had anything to do with the cirrhosis, for it need hardly be stated that there was nothing peculiar in the animal's diet, as compared with that of its stable companions.

Fig. 2 illustrates another very advanced case of cirrhosis in the horse. In this animal also the lesion had not been suspected during life, and the immediate cause of death was rupture of one of the large vessels within the chest. Here again there was no

dropsy and no appreciable jaundice. The most interesting feature in this case is the deposit of granular bile-pigment in the liver cells. Even after the cells have completely disappeared, their former position is indicated by the presence of little masses of this pigment in

Fig. 2.—Section of cirrhotic liver of horse ($\times 50$). 1, 1. Broad bands of fibrous connective tissue. 2. A lobule surrounded by the new connective tissue. 3. Group of liver cells loaded with bile pigment. 4. Small masses of bile pigment left in new connective tissue after disappearance of the liver cells. 5. A small bile duct. 6. A small vein.

the new connective tissue. The liver in this case was about one-half larger than normal, and its capsule was smooth and not thickened. The lesion shown in Fig. 2 resembles the coarse or alcoholic cirrhosis of the human subject, but some parts of this same liver show a considerable number of small bile ducts in the cirrhotic tissue.

A RECORD OF THE PORRO-CÆSAREAN OPERATION, SHOWING ITS RESULTS IN ALL COUNTRIES.

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Two hundred and fifty operations (1876-1888) in 15 countries with 115 deaths; 29 deaths in the first 50 cases, and only 9 deaths from the last 50 operations; 12 children lost out of the last 81.

Thus stands the latest record of this important abdominal operation; one that must grow in favour as an alternative to craniotomy when its marvellous diminution in death-rate shall become generally known. Eighty-one operations, 10 of them reported by letter, have been performed since January 1st, 1885, with 16 deaths and 1 suicide in an improving patient. There were, as far as known, 23 operations in 1885; 23 in 1886; 15 in 1887; and 20 in 1888. Eight of last year's cases have been received by letter thus far, and but one was fatal. The last 14 operations of 1888 saved all of the women and children but one each. No cases are noted where uterine rupture preceded the hysterectomy, as such operations are not Cæsarean. Great Britain is credited with 16 operations and 5 recoveries; her last five cases were successful to the women and children. Researches are still in progress and a tabular record will be published when the work is completed. The cause of science and humanity demands that this encouraging report in progress, should no longer be withheld from the medical world. The operations are credited as follows, namely:—

¹ For these clinical particulars I am indebted to Professor Baird, of the Veterinary College.