Bornhaupt, Gefassverletzungen und traumatische Aneurysmen in russische-japanischen Kriege, *Arch. f. Klin. Chir.*, Bd. 77, 1905, S. 590. ²⁷ *Zentralbl. f. Chir.*, vol. ii, 1913, SS. 1241, 1242. ²⁸ Jesse Foot, *Life of J. Hunter*, p. 82.

ROTATION OF THE LIVER ON ITS VERTICAL AXIS.

BY

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ON June 23rd last I was asked by my colleague, Dr. Hobbblethwaite, to perform cholecystotomy for the removal of gall stones on a female patient of his, aged 33, in the hospital. The history and symptoms were the usual ones in a case of this kind, and the physical signs gave no clue either by their presence or absence of the difficulty that was shortly to be encountered. There was tenderness and rigidity of the right upper rectus and pain on pressing the twelfth rib about an inch from the spine.

On opening the abdomen in the right upper semilunar line by the usual gall bladder incision, which discloses the liver in its upper third, on this occasion the liver could not be seen until a fold of peritoneum which covered it and separated it from the diaphragm and upper abdominal wall had been lifted up. The hand was then introduced to explore the gall bladder, but no gall bladder was to be felt or seen, the only thing that bore the remotest resemblance to it was soon found to be the lower pole of the right kidney, which therefore must have been projecting forwards unduly. I then passed my hand up to the transverse fissure, but I could not find the foramen of Winslow, and though I could identify the anterior pillar and its contained structures, the common bile duct, the hepatic artery and portal vein, yet the "feel" of it seemed in some indefinable way to be not quite normal. There was nothing left to do but to trace the edge of the liver both ways; towards the left nothing could be identified the whole way round; towards the right I came upon the liver notch in a position corresponding to the anterior axillary line. Here was something definite at last. The fold of peritoneum which covered the edge and upper surface of the liver was found to be tied down at this notch and so was identified as the suspensory ligament, and this was confirmed by tracing its free edge to the umbilicus; its attachments to the diaphragm occupied the normal position. On tracing the edge of the liver further round still I came upon a small flaccid sac containing calculi suspended hammock-like by a mesentery from the under surface of the liver in a position corresponding to the posterior axillary line and in front and to the outer side of the upper part of the right kidney.

The riddle was now almost solved: the liver had rotated on its vertical axis through an angle of approximately 90 degrees; the lobe opposite the incision and covered by the suspensory ligament was the left with the characteristic omental tuberosity on its under surface, and the quadrate lobe, instead of being opposed to the abdominal wall between the mid and right semilunar lines, was related to the right hypochondrium between the anterior and posterior axillary lines. It was impossible to see the gall bladder through my present incision, though it extended from the margin of the ribs to opposite the umbilicus. I tried to rotate the liver back again to its normal position, grasping it with both hands to make the attempt, but I found that it was immovably fixed in this position, nor could the gall bladder be made to present in the incision. I therefore made a transverse incision at right angles to my first incision back as far as the mid axillary line. The gall bladder could now be opened in the corner of this incision, and I evacuated eighty-one small calculi. A tube was put in and brought out at the same place.

The patient made an uninterrupted recovery.

I regret that the condition of the patient after the transverse incision was made permitted us to do very little more than complete the operation we set out to do—namely, to relieve her of her gall stones—otherwise more time would have been spent in examining the relation of the liver to the neighbouring organs and viscera. I did make another attempt to pass my finger through the foramen of Winslow, but was no more successful. The stomach, pylorus, duodenum, and hepatic flexure of the colon

seemed to occupy their normal positions, and the liver seemed to be of the size to be expected in a female patient. The gastro-hepatic omentum seemed to be more superficial than is ordinarily the case, but I made no examination of the cardiac orifice of the stomach.

It is, I think, significant that the rotation of the liver is from left to right, and through the same angle, namely, 90 degrees, that the stomach and duodenum rotate early in fetal life, and at first it was a tempting theory to suppose that it took place at the same time.

In the meantime, however, I have had the benefit of a note from Professor Arthur Keith, who has set me right on this matter. It appears that this rotation is an extreme degree of prolapse of the liver, occurs only in women, and in women over 30 years of age. It is usually accompanied by evidence of visceroptosis. My patient was certainly on the spare side, and was such a patient as one would not be surprised to find a movable kidney in, but the right kidney, at any rate, was fixed with its lower pole projecting forwards under the liver. The only other evidence of visceroptosis was the gall bladder mesentery, which was about an inch long.

THE EFFECTS OF CINEMATOGRAPH DISPLAYS UPON THE EYES OF CHILDREN.

BY

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THE following observations refer only to the direct effects of the cinematograph display upon the eyes, and ignore indirect effects that may be held to arise from undue excitement, confinement within a place the atmosphere of which may be injurious, and the fatigue caused by the late hours at which children attend exhibitions.

In general, it may be said that the effects on the eyes of children do not differ from those experienced by adults. There are few, if any, adults who do not experience some annoyance, very many of the more sensitive or impressionable feel considerable strain; children may be taken to be in the same class as the more impressionable of adults, owing to their lesser power of resistance and readier experience of fatigue.

The unpleasant effects associated with the cinematograph exhibition, so far as they affect the eyes, are due to the following conditions: (1) Glare; (2) flicker; (3) rapidity of motion; (4) concentration of attention; (5) duration of exhibition.

Some of these conditions are peculiar to the cinematograph, others are found in the same or some degree in other optical exhibitions. But none of them are natural, and the more they depart from the conditions of natural phenomena the greater is the adverse influence on the eyes.

1. Glare.

Though the human eye has a wonderful power of adapting itself to varying conditions of illumination, it is well-nigh incapable of adapting itself to a single light in a dark place. The light may be feeble, but if the space in which it is exhibited be dark, it will be relatively intense, and therefore irritating to the eyes.

These conditions are found exemplified in the highest degree in all optical lantern exhibitions. To enhance the effect of the show the room is made as dark as possible, the light of the lantern as bright as possible, and the transparency as strong as possible. The light from the lantern is projected on to the whitest possible screen, and therefrom it is reflected directly into the eyes of the observer. All these necessary conditions of the show are bad conditions for the eyes; they all tend to produce the maximum of fatigue. The effects of glare are further intensified in the cinematograph show by the programme screens shown between the films. These slides are often far too brilliant in the contrast between the white print and the dark background; particularly bad are the impromptu slides made by scratching the writing on a screen of coloured gelatine. These slides should be prepared so that the contrast between the print and the background is the smallest necessary for visibility. In a

few badly managed shows there are occasions when the film is entirely withdrawn from the lantern. Then the watchers are exposed to the full glare of the reflected light of the lantern.

Glare cannot be dissociated from the shows. It can be reduced by providing a sufficient illumination of those parts of the room or hall removed from the immediate region of the screen; by attention to ordinary details connected with the use of fixed slides; and by care in the degree of illumination of the hall during the interval.

2. Flicker.

Most people will acknowledge that the flicker of the cinematograph is peculiarly irritating. Flicker is of two kinds. First, there is the effect of the rapid change of the moving film. Sensitive people—those whose “reaction time” is high—appreciate this more than those whose senses are duller. The effect is irritating according to the slowness of the flicker. The more rapid the change of the film, the less is the effect upon the eye; if the film can move at a rate slightly greater than that at which the keen eye is able to perceive variations of light, this sort of flicker will cease to worry. There is already a great improvement in the newer films and machines. The defect is most evident now in the coloured films, where attempts are made to give a natural colour to the scenes by the rapid alternation of different coloured films.

There is another kind of flicker due to bad films. Scratches and patches produce faults in the films which allow of the sudden exposure of the eyes to bright flashes of light; when these flashes follow in rapid and irregular succession, as in a badly damaged or worn film, all the irritable effects of flicker are intensified.

3. Rapidity of Motion.

This defect in the cinematograph is to some extent connected with the previous defect. With the intent to reduce flicker, films are moved though the machine at a rate greater than the natural rate of progress of events depicted. The eye has a habit of work, just as any other part of the body or the whole organism, and there is a resentment expressed in terms of fatigue when it is required to work at a rate different to the habitual rate. The defect in the film is most evident in those scenes which depict movement near at hand; when the scene is a distant one the variation in speed is little noticeable.

4. Concentration.

Work is arduous according to the concentration of effort. The cinematograph requires a concentration of attention greater than that necessary to follow any other kind of show, and the effort is a conscious effort. At the play there is sound as well as sight, and the sight to be seen is a slower moving scene in a full perspective and of solid proportion. The players have individual points of interest, in their persons and clothes; the eye wanders over these points at an habitual rate of work, and it is not unduly exhausted. At the cinematograph there is no adjuvant sound which carries on the sense of the screen when the eye is not engaged. For the whole duration of the scene the eye must be fully alert and constantly varying its condition according to the variation of illumination of the screen. Children are well aware of the difficulty of concentration of sight. They have a game of competition in concentration. Each tries to stare the other out of countenance without a blink of the eyelids. The one that blinks first loses the game. The effort required to refrain from blinking on such a short concentration of vision is some indication of the effort of concentration required to follow the cinematograph picture. Such a concentration of effort is quite unnatural, especially for children. Ordinarily the eye wanders freely over objects, the time of concentration on any one object is very short. One can gain some idea of the frequency of variation of movement of the eye by looking at some object in the sky near enough to the sun to cause the sensation of after-images of the sun. Although the eye was apparently engaged in looking fixedly at the object, the number of after-images of the sun will prove that even for that short space of apparent perfect concentration it had moved several times.

5. Duration of Exhibition.

Cinematograph shows commonly last from one and a half to three hours. During that time, save for the short

intervals, the eye and the mind are on the stretch. The attention of the child is not naturally capable or willing to concentrate for any but the shortest time. It is common knowledge with teachers that lessons to be effective must be short, and the shorter the more youthful the child. With a lesson longer than half an hour the attention of the small child flags, and the time is lost and the child tired. Conversely, if the attention can be forced by the thrill of the picture show for a longer period than is natural, the nervous effort is increased out of all proportion.

These are the main defects associated with cinematograph shows. Some of them are peculiar to this show, others common to it and other shows produced by the optical lantern. Some are remediable, others may be mitigated by an alternation of the exhibition with other kinds of entertainment. All of them may be reduced in intensity by shortening the duration of the show and preventing small children from attending two shows in direct succession.

Some other ill effects may be experienced according to the position occupied by the observer in relation to the screen. The “optimum” position is as nearly as possible in a line with the centre of the screen and as far away from the screen as thrice its full height. In this position and at such a distance the picture appears more natural than in any other. If the observer is too near all the defects of the film are exaggerated and the movements of head and eyes to cover the field of the screen are fatiguing. If the observer is too far to one side of the centre of the screen the distortion of the image thrown on the screen is great. If the observer is too far away from the screen the effort of concentration to catch the drift of the show is exaggerated.

It will be asked, What evidence is there that children's eyes suffer from the picture shows? The evidence is of such a nature that it cannot be presented by figures and percentages. It is difficult to answer the question whether permanent defect arises out of attendance at the shows. But there is a recent observation which I am inclined to think has some bearing on the point.

The examination of the case papers of a large number of school children, who have been referred to eye clinics on account of failure to pass the standard vision tests at the schools, shows that there is an increasing number of children who on examination at the clinic are found to have nothing the matter with them. At the school they did not pass the test; at the first examination at the clinic they did not pass the test; but when their eyes were examined nothing amiss was to be found, their eyes objectively were normal, or so nearly normal as to be quite capable of passing the standard test; at a later subjective examination they did pass the test satisfactorily. Several causes may be at work to account for these occurrences. The children may fail to appreciate what is wanted of them at the first test, but against this it is to be observed that the occurrences are not confined to the small children. The children may be “making game” of the matter to get a half holiday at the hospital; possibly this is so in a few cases. But by far the most likely cause is a condition of fatigue in the children so that at the time of the test they were incapable of putting out sufficient energy, either ocular or mental, to read the standard types. Every one is familiar with the fact that in a state of fatigue ordinary feats, easily accomplished in health, cannot be accomplished. In some cases I have ascertained that children of this sort were in the habit of going to picture shows, and it is possible the increasing attendance at these shows may be associated with the increase in the number of those children who fail at the vision tests without objective cause. If the normal-eyed children suffer, it is certain that the result will be more serious in those with defective eyes, and possibly lead to permanent aggravation of those defects.

The best protection for the child will be secured by the following provisions: (1) The reasonable illumination of all parts of the hall not directly beside the screen. (2) The improvement of the movement of the film so as to reduce flicker, and the withdrawal of films immediately they are damaged. (3) An improvement in taking the picture so as to bring the rate of motion of the objects depicted more nearly to the natural. (4) The increase in the number of intervals in the show, and the interposition of exhibitions other than that of the optical lantern. (5) The limitation

of shows for children to one hour, and the prohibition of "repeats." (6) The reservation of the children's seats to the "optimum" position in the hall.

With such provisions the indulgence in a show once a week should do no harm to the eyes of a normal child.

PUERPERAL FEVER TREATED BY VACCINE.

BY
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The following case may be of interest in connexion with that recorded by Dr. Grier in the *BRITISH MEDICAL JOURNAL* of September 30th, 1916, p. 454.

Mrs. H., a young primipara, was confined on March 27th. I had been called to see her three days earlier as she had an erythematous rash, without fever or other symptoms. It had almost vanished when she was confined, and there was no subsequent peeling. The head was at the vulva when I arrived, and I was told it had been there some time. The presentation was occipito-posterior unredacted. The child was born in half an hour, and there was a considerable tear of the perineum. The placenta was long in coming and was incomplete. While I was preparing to explore the uterus the patient, who was well and cheerful when the child was born, complained of faintness, and I found her pulseless. There was no marked external hæmorrhage, and the uterus was contracted, but she was pale and restless and had sighing respiration. For two hours I tried to rally her, with no success. As she then passed a large clot, I gave chloroform and removed the rest of the placenta, which was lying loose at the internal os; the uterus was then douched and pituitary extract was injected; saline was injected per rectum and afterwards into the axillae, but with no result, and I left her six hours after the birth of the child still practically pulseless. Twelve hours later she had rallied; she was warm, her pulse was 120, and the temperature normal. She had an angry blister, the size of half a crown, on the left buttock, three or four inches from the vagina, and stated that she had felt some discomfort there for several days. To this I attribute the fever which followed.

Next morning she felt better, but had a headache; the pulse was still 120, the temperature was 99°. In the evening the temperature was rising, and the perineal tear looked sloughy. Remembering the rapid and possibly inadequate exploration of the day before, I explored the uterus again after cauterizing the perineal tear with carbolic acid. I found nothing, but caused a rigor.

Next day, as the patient was obviously worse, Dr. Pearson of Bideford kindly saw her with me; he also found that the uterus was empty. I then injected antistreptococcal serum,

A = Rigor; temperature not taken. B = Consultation. C = Serum, 30 c.cm. D = Serum 20 c.cm. E = Cough; serum, 30 c.cm. F = Urticaria. G = V.E. swab from cervix H = Measly rash; delirious. I = Polyvalent vaccine; negative phase. J = sweating.

with excellent results as shown by the chart, for a few days; the pulse came down to about 100, and the patient was indomitably cheerful. She then developed a slight cough, the temperature began to rise in the evenings and presented a septic character. A few days later the morning temperature also gradually rose, and she developed an urticarial serum rash, ten days after the first injection of the serum, and on the thirteenth day of the illness. The cough continued, but all that I could find was slight diminution of entry of air and diminished resonance at the base of the right lung; the breathing was not quickened. The perineal tear was clean, there was a slight discharge from the cervix, but no smell; the blister was still angry and painful. Aspirin had been prescribed for a few days, and afterwards quinine, and a vaginal douche was given twice daily.

When the urticaria disappeared and the morning temperature remained high, it became evident that the latter was not a

serum phenomenon. Moreover the pulse began to rise above 100, and the patient lost her pluck. I was unwilling to put her to the expense of an autogenous vaccine, but I felt further delay would be dangerous. A swab was taken through a Fergusson's speculum, and this apparently caused a considerable increase in the fever. Three days later the Clinical Research Association reported that so far no virulent bacteria had developed.

On the twentieth day of the illness the patient developed a third rash which was measly in type and doubtless septic. In view of the negative bacterial report I tried to find an internal abscess, but failed, nor could Dr. Pearson discover anything of the kind. Next day the patient became delirious, and the Clinical Research Association reported that a few streptococci had developed and that they were sending a stock vaccine at once. The marvellous result of that stock vaccine, after a slight negative phase, is shown by the chart. The patient had a crisis and was well. The cough, never troublesome, cleared up. Only the obstinate sore on the buttock remained, and when the autogenous vaccine arrived and was injected that cleared up at once; evidently the vaccine was specific as regards the blister.

The patient, I think, must have had a low form of septic pneumonia, although the physical signs were never definite. A septic pneumonia does not usually end by crisis, but apparently the vaccine stimulated it to do so. The initial collapse was puzzling. In the absence of cyanosis and struggling for breath I hesitated to diagnose embolism of the lungs; perhaps there was some embolism of the heart, or a massive septic infection. There was a little more bleeding than usual, but not much. There were never any abdominal symptoms except slight tenderness over the uterus.

A CASE OF "TRENCH FEVER," CONTRACTED IN ENGLAND.

By R. D. MACGREGOR, B.A., M.B. OXON.,
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The case of "trench fever" here described is recorded because the patient has never been out of England, and has contracted the disease while in hospital in attendance upon cases of trench fever from France. As has been the case in a number of instances occurring abroad, the patient is an R.A.M.C. orderly.

Pte. A., R.A.M.C., has been employed for some months at this hospital as a ward orderly, and bears a good character. He is 54 years of age, and has had no serious illness except appendicitis, for which he was operated upon. He has never had rheumatism.

On August 30th, 1916, he had acute pain in his legs all night. For three days before this he had had some aching in the legs, but had carried on with his duties. On the morning of August 31st his legs were so acutely painful that he could not stand, and was brought to the hospital on a stretcher. The fronts of the legs were found to be very tender, the tenderness being most marked along the inner border of the tibiae. There was headache, and some tenderness and pain over the front of the thighs. The temperature in the evening was 100°; the next evening it was 101°, the symptoms continuing the same. On the fourth day the temperature came down to normal, and remained so thereafter, but there was little remission in the pain. He was not able to stand with ease until about the seventh day. In addition to the leg pains, headache was frequent, and pains began to be experienced in different parts of the body—transversely across the chest below the nipples, in the neighbourhood of the hips and of the shoulders. On November 5th there was pain, which he described as "cruel," in the left shin, but none in the right. There was pain also in the right shoulder. The pains were usually worse at night and in damp weather. Throughout the illness there were no pathological signs except the initial pyrexia.

CHART 1.—Pte. A.; "myalgic" type of trench fever (contracted in England).

The case is fairly typical of the "myalgic" type of trench fever. Trench fever, as so far described, has no completely uniform character, but presents a symptom-complex easily recognized and divisible into a number of well-marked types. McNee, Renshaw and Brunt,¹ and Hurst² have described a "long" and a "short" type of