taken as already described, are placed so that the right eye image is opposite the right mirror and the left image opposite the left mirror, each eye will recognise its own picture, and they will combine (as usual) and give rise to a single image in perfect relief.

There are several devices for supporting the skiagraphs, and also for simultaneously making them approach or recede from the mirrors. The simplest of all arrangements is to have two mirrors mounted on an upright block of wood, which can be placed upon a table, while the skiagraphs can be supported by any simple means in the proper positions. The writer has devised a form of revolving Wheatstone stereoscope shown in Fig. 4.² A four-sided box, which can be revolved on a vertical rod, is placed opposite each mirror. Upon each of its four sides one of a pair of stereoscopic skiagraphs is placed. The corresponding pictures are similarly placed on the other box. In this way the boxes can be rotated and two corresponding skiagraphs brought simultaneously in correct position opposite the mirrors. This prevents the necessity of adjusting each pair separately, and saves time in demonstrations. The block supporting the mirrors is attached to a small base with bevelled edges, which slides in a broad groove, and enables the observer to slide the mirrors towards or away from his eyes. In this way he can adjust the mirrors to the position which enables him to combine the pictures most comfortably. Each revolving box is fixed by its vertical support to its sliding board. This allows the distance of the skiagraph from the mirrors to be altered at will.

The Wheatstone stereoscope is peculiarly adapted for *x*-ray photographs; first, because, as everyone knows, a print from an *x*-ray negative is reversed—for example, if a skiagraph of a right hand be taken, when printed it appears to be a left hand. Now, if such a print be viewed in a Wheatstone stereoscope, it is reflected in one of the mirrors, and is thus reversed to its original position by the reflection. Therefore, if opposite the right mirror is placed the print from the negative produced when the Crookes's tube was displaced to the right side; and opposite the left mirror the print from the negative taken when the tube was displaced to the left, the observer will then see the parts in correct stereoscopic relief, as if he had been looking at them with his eyes placed so that the right eye was at the point occupied by the anode when displaced to the right, and the left eye at the point occupied by the anode when the tube was displaced to the left. If the skiagraphs be viewed under the same angle as they were taken, the stereoscopic picture would show the parts of the true or actual size, and the exaggerated distortion of the single *x*-ray photograph is overcome. The importance of such a result to a surgeon is great.

There is no limit to the size of the pictures which can be seen in a Wheatstone stereoscope. The largest size the writer has as yet taken stereoscopically is 12 by 15 inches.

If the right picture be placed opposite the left mirror, and left picture opposite the right mirror a stereoscopic picture will be seen as before, only reversed. For example, in one case a hand will appear as seen from the dorsal aspect; if the prints are transposed it will appear as a hand seen from the palmar aspect. The same transposition can be effected by turning each print upside down.

The negatives, while wet, can be seen in a stereoscope if they be held in proper position by upright frames, and each illuminated by a strong light diffused through ground glass or white paper, but the effect is not so good as viewing prints.

If it be desired to reproduce the skiagraphs as illustrations in a book or periodical they can be reduced and mounted alongside of each other, as has been done with the stereoscopic skiagraphs (see Fig. 2 on special paper) reproduced from the original full-sized plates taken by me of a case of "gunshot wound of the leg," under the care of Mr. Howard Marsh.

INSPECTION OF STEREOSCOPIC SLIDES WITHOUT THE STEREOSCOPE.

By practice it is not difficult to acquire the power of combining stereoscopic pictures without an instrument of any kind. There are two ways of doing this:

1. By looking beyond the photograph, so that each eye sees the picture opposite it.

2. The most easily acquired and most important for *x*-ray work, as it enables skiagraphs of any size to be seen at once, consists in crossing the visual axes. This may be accomplished as follows: The photographs or skiagraphs are placed correctly in front of the observer; he then holds up his finger in the middle line between his eyes and the skiagraphs, and while looking at the top of his finger he will observe double images of each skiagraph; by a little perseverance he will learn to make two of the images in the centre combine, and he then will have a beautifully clear stereoscopic image apparently in the air. Behind to right and left will be two images, but these he soon learns to ignore, or he can cut them off by bringing his hands cautiously from the outer side of each eye towards the middle line, stopping the moment the two side images are cut off. It is, of course, very convenient in this way to see negatives in stereoscopic relief immediately after development.³

NOTES.

¹ The apparatus is made by Messrs. Muirhead and Co., Elmer's End. ² The Wheatstone stereoscope is made by Messrs. Curry and Paxton, Great Portland Street, W. ³ See Wheatstone's papers already referred to and Leconte's *Sight*, the International Scientific Series, Kegan, Paul, and Co.

A CASE OF BULLET WOUND OF THE LEG, IN WHICH THE BULLET WAS LOCATED BY SKIAGRAPHY.

[WITH SPECIAL STEREOSCOPIC SKIAGRAPH.]

By HOWARD MARSH, F.R.C.S.,
Surgeon to St. Bartholomew's Hospital.

F. E., aged 14, was admitted into St. Bartholomew's Hospital on June 8th, with a bullet wound in the left leg. He said that as he was wheeling a barrow in the street he felt something sting his leg. On pulling up his left trouser he found blood trickling down from the wound. On examination this was found to be a quarter of an inch in diameter, and placed at the junction of the uppermost and middle thirds of the leg. A probe passed into it travelled in a direction downwards and outwards for a distance of 6 inches.

A day or two afterwards a skiagraph was taken by Mr. Mackenzie Davidson, and the bullet was very clearly seen to be situated at the back of the limb (see Fig. 2, special plate) about half-way between the tibia and fibula, but on a posterior plane.

OPERATION.

The limb was rendered bloodless by an Esmarch's bandage, and an incision about 3 inches long was made through the skin and superficial fascia at the inner border of the tibia. The deep layer of muscles was then separated from the bone, but the bullet was not found. Then the superficial and deep layers were separated from each other, and the bullet was immediately found embedded in the substance of the tibialis posticus muscle, and was easily removed. The wound was closed by a continuous suture, and dressings were applied. The wound healed by primary union, and the boy was discharged a few days afterwards.

REMARKS.

The skiagraph, as produced by Mr. Mackenzie Davidson's stereoscopic process, defined the position of the bullet, which was not bigger than a pea, with great exactness. The stereoscopic skiagraph by which this report is illustrated, though reduced, well illustrates this point.

Without a skiagraph there was no means of knowing how far the bullet had travelled from its original point of entrance down the leg. The skiagraph disclosed this, and also the fact that it was placed on the posterior aspect of the limb and on a plane posterior to the bones. Thus the stereoscopic effect defined the situation of the bullet in a manner that had not as it appeared to me been previously possible.

MEDICAL EDUCATION OF WOMEN IN RUSSIA.—A proposal was brought before the recent Congress of Russian Medical Men that an institute for the medical instruction of women should be established at Kieff. Dr. Piasseski proposed that the Faculties of Medicine of all Russian universities should be open to women. Both these proposals were received with sympathetic acclamations.