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CASE OF RETINAL DETACHMENT, FROM CONCUSSION,
WITH REMARKS.

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ON September 12, 1859, a lad, aged 13, was brought to me on account of an affection of his sight. It appeared that two or three weeks previous, while playing, he had received a blow upon the right eye from an apple. Considerable pain, and tumefaction of the lids, immediately followed. He was unable to open the eye at all for seven or eight hours, and then found that objects were only indistinctly visible. The swelling subsided in a few days, but the vision remained imperfect, and finally it was thought best to take medical advice. The treatment, in the mean time, had consisted simply of cold applications.

Externally, the eye appeared normal. There was no injection, pain, nor photophobia, and the pupil played freely. The boy was, however, unable to read at all with the right eye, and all large objects appeared very indistinct. Without further questioning, I applied atropine to enlarge the pupil for an ophthalmoscopic examination, holding in view the possibility of finding a dislocated lens, or an opacity of the vitreous humor, or an apoplectic condition of the retina. While waiting for the dilatation to take place, the lad incidentally remarked that he could only see a portion of any one object, the rest seeming, as it were, cut off. This led me at once to test more closely the field of vision, and it appeared that the upper and inner portions of objects were invisible. For instance, of pictures and large-sized letters, he saw only the right lower half. An almost immediate conviction ensued that the following state of things had probably occurred:—That, owing to the concussion from the blow, a rupture had taken place in one or more of the choroidal vessels, and a hæmorrhage had succeeded, which, gravitating downwards, had separated the lower part of the retina from the choroid, and pushed it forwards into the posterior

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chamber, thereby rendering that portion insensible to external impressions. The lower and outer part of the retina would of course correspond to the upper and inner part of objects.

Ophthalmoscopic Examination.—The upper and inner portion of the bottom of the eye presented the normal red color, with the exception that two or three small bits of pigment or clots of blood floated about in the vitreous humor; and further questioning elicited that these were occasionally perceived by the patient. The lower and outer part of the field, however, was separated from the rest by a distinct line of demarcation, below which there was no trace of the red color, but a whitish-gray appearance, which seemed to stand forwards in the posterior chamber towards the lens, and to quiver with the motions of the eye. A slight haziness of the vitreous humor prevented as clear an observation as could be desired, but, without doubting the correctness of the diagnosis, the patient was requested to come again in three weeks.

At the end of that time a second examination was made, and the haziness was found to have cleared away. The grayish-white appearance now stood forth as an unmistakable membrane projected forwards considerably towards the lens, in folds, and moving with the movements of the eye. Over this, ran several retinal vessels, which, owing to the creases in the membrane, were twisted and interrupted in their course. Dr. Hathaway, of Worcester, was present and saw the same appearances.

a. Lower part of the retina, separated and projected in folds. (By a mistake in engraving, this is made at the lower and inner, instead of the lower and outer part.) *b.* Retinal vessel following the course of the folds. *c.* Bit of fragment floating in the vitreous humor.

Before touching upon the points of interest in this case, it may be well briefly to allude to the present state of knowledge regarding retinal detachment. This affection has been very little spoken of by any authority before the introduction of the ophthalmoscope. Even English and American text books, of the present day, refer but slightly to the disease which is the principal cause of retinal separation, under the title of sub-choroidal dropsy. Mackenzie says that a watery effusion between the choroid and retina may produce a "coarctation" of the retina, which may project so far forwards as to be visible to the naked eye, and present appearances precisely similar to those described above. He furthermore adds, that this has been mistaken for cataract, and a useless and

painful attempt at depression made. He also quotes, on the important authority of Panizza, a case in which an eye, unquestionably with this disease, had been extirpated, under the belief that it was encephaloid cancer.

Within the last four or five years, the ophthalmoscope, and that chiefly in the hands of German ophthalmists, has shown that detachment of the retina is not an unfrequent morbid appearance in amaurotic affections. A simple separation is almost always the result of a sub-retinal effusion, serous or sanguineous, from choroidal disease. In a proportion of perhaps 95 per cent., it has been found at the lower and outer part of the bottom of the eye, and hence the inference has been that it commences at the lower part. The last number of Graefe's *Ophthalmological Archives*, however, contains a short article upon this very subject, which goes to modify a little the views previously entertained. From the fact that patients seldom present themselves for treatment before the trouble has been of some duration, cases have rarely been observed at the commencement of the disease. On the other hand, the detachment from effusion takes place with considerable rapidity. Dr. Graefe has recently had an opportunity to examine some cases in the very early stages, in which he has found a small detachment occurring at the upper part of the retina, which gradually changed its locality till it reached the bottom. He has also observed that these small portions of the retina first separated have, after the escape of the fluid from behind them, resumed their position and functions. From this he concludes that, whereas it was formerly supposed that this separation commenced almost always at the bottom of the eye, and that the detached portion seldom regained its place, and never its functions, he now believes that separation may begin frequently, if not generally, at other parts, and that, in the early stages, small detached portions, if relieved of the effusion behind, may resume their place, and also their functions, provided, of course, the membrane remains transparent. While the serous fluid is finding its way downward, it may rupture the membrane, and cause an opacity of the vitreous humor. But when it is remembered how strong is the attachment of the anterior portion of the retina to the circumference of the ciliary circle, as is shown in dissections, it will be readily understood how this membrane can bear a considerable pressure against it.

In that disease called irido-choroiditis, which results in general disorganization and atrophy of the eye, retinal separation is one of the complications; but here it ensues from a diminution of the vitreous humor, and not from a fluid behind. Detachment of the retina may also occur from puncturing wounds, and from a cysticercus which is forcing its way through into the posterior chamber.

Returning to the original case, we have here a retinal separation taking place, not from choroidal disease, nor from a penetrating wound, nor from an entozoon, but, as we have every reason to be-

lieve, directly from concussion. Considering the frequency of blows upon and about the eye, it would seem as if, since the introduction of the ophthalmoscope, a certain number of parallel cases ought to have found their way into print. A considerable examination of recent foreign ophthalmic literature, however, failed to bring any such to light, until, at the very moment of penning this, two recorded cases were found in a work fresh from the English press—namely, Cooper on Wounds of the Eye. In one case, retinal detachment occurred from a blow upon the eyebrow with a flail. In the other, it resulted merely from a general concussion. A man, while running violently, fell, and received a severe shock. The injury to the sight was only discovered about three weeks after, by accidentally covering the sound eye with the hand. In both cases the pupil was dilated and motionless.

The diagnostic value of these and similar cases exists principally in showing the inefficacy of treatment. Probably, in a large number of instances where a diagnosis of paralysis of the retina from concussion has been made, the ophthalmoscope might have shown an actual detachment, and have saved the patient from an harassing course of mercurials, blisterings and bloodlettings. Where the retina is considerably projected towards the lens, a very simple illumination of the eye serves to detect it. In the absence of any other instrument, a fragment of looking-glass, with a small bit of the quicksilver scraped off from the centre, might suffice.

METHOD OF PRESERVING VACCINE LYMPH.*

[Communicated for the Boston Medical and Surgical Journal.]

HAVING received this handsome pamphlet from the author, and knowing from personal experience that the method therein described possesses most decided advantages, we transcribe for the pages of the JOURNAL some of its most striking and important passages; believing that at a season when this subject has been interesting our readers, any suggestion which will enable them at all times to keep their own supply of lymph, so that they need never beg it of their neighbors, or disoblige those who apply to them for vaccination, will be, after the experience which most of us have lately had, acceptable to all. We therefore propose to show that this may be accomplished by the use of capillary tubes. It may be well to state that we are not alone in this opinion, for an inquiry made in the month of August last, as to their value, by a commission of her Majesty's Privy Council, was followed by a circular from that body, recommending their general adoption by public vaccinators throughout the Kingdom.

* Exposition of a Method of Preserving Vaccine Lymph Fluid and Active; with Hints for the more Efficient Performance of Public Vaccination. By William Husband, M.D., Fellow of the Royal College of Surgeons of Edinburgh, and one of the Medical Officers of the Royal Public Dispensary and Vaccine Institution, Edinburgh. London: John Churchill. Edinburgh: Sutherland & Knox. Dublin: Fannin & Co.