and heavy responsibility. In another patient, also a male, there was some hysteria.' In some of the cases the dizziness was followed by sickness. The vertigo came on at no fixed time, but was generally worse in the forenoon. Among the exciting causes of an attack are mentioned the noise and whirl of the streets and the sight of a carriage. The attacks sometimes recurred during quiet or even in the dark. 'Assuming the erect posture in the morning often produces it (vertigo) so that the sufferer has again and again to return to his pillow.'

Dr. Allbutt does not think the disease depends upon vascular charges, but that it is 'one of the cerebellum, or of the great basal ganglia near it. Remedies addressed to the stomach as a rule do no good. Dr. Allbutt recommends complete change of scene, and removal of all causes of nervous depression, and Turkish baths. Strychnine is the only drug which he has found of much use. Leeches, blisters, purgatives, &c., do more harm than good.

## ON THE RELATION BETWEEN SCARLATINA AND DIPHTHERIA.

In a communication to the *Berliner Klinische Wochenschrift*, July 6, Dr. zum Sande says, 'there is properly no difference between diphtheria and scarlatina, for the eruption, upon which the diagnosis of the latter has been based, is found in diphtheritis, and as regards the complications and sequelæ there is so great a similarity, not to say identity, between the two affections, that one involuntarily refers both to the same cause.' In support of this, Dr. zum Sande relates that he was called to see a child twelve months old, who was suffering from diphtheritis. The mucous membrane of the throat was gangrenous, the maxillary glands very much enlarged, and the appetite quite gone. After some days this child died, without any eruption having appeared on the skin. Three days after its death, its brother, a boy ten years of age, was seized with all the symptoms of acute diphtheritis, viz.: intense redness of the mucous membrane of the throat, numerous detached exudation-patches, high fever, and pain in the neck. In order to prevent the further extension of the disease among this boy's sisters, he was placed under the care of relatives who had no young children. The swelling of his throat and the exudation increased up to the eighth day, when an eruption appeared covering the whole body. At first it was of a pale red colour, but latterly became more dark. With the appearance of the eruption the fever increased, delirium came on, and the prostration became so marked, that a fatal result was expected. The symptoms, however, became milder, the eruption faded, desquamation appeared, and the child recovered. Whilst this boy lay sick, one of his relations, a girl sixteen years of age, who had been in frequent communication with him, was seized in a similar manner, the eruption, as in the boy, appeared on the eighth day, recovery following with general desquamation eight days after. This girl's attack was hardly completed when her married sister, a woman thirty years of age, was attacked by diphtheritis. Although in this latter case the neck and throat symptoms were very marked, the patient recovered, but without any eruption having appeared.

Scarcely had this woman recovered when her son, a boy nine years of age, sickened in a similar manner, but so severely as to endanger his life. On the eighth day of illness a general eruption appeared, which in no way differed from that of scarlatina. It lasted about six days, when the disease terminated with general desquamation. The father of this boy, who had assiduously nursed him, was seized by an attack of diphtheritis such as Dr. zum Sande had rarely seen equalled in severity. This case ended in recovery without an eruption. The disease extended from the boy first mentioned to several adult persons besides the two here mentioned, but in none of these adult cases was any eruption present. Dr. zum Sande notes the following resemblances between diphtheria and scarlatina. Vomiting at the commencement and an affection of the mucous membrane of the throat are common to both; in both the lymph-glands and the parotid glands are much swollen; in both the larynx is implicated, and in both there is more or less affection of the kidneys and of the joints. Dr. zum Sande considers that all difficulties in reference to the two diseases may be solved by admitting their essential identity; by assuming that they are due to one and the same kind of infectious matter (*Ansteckungsstoff*), namely, bacteria; and that the difference in the symptoms in particular individuals is due to age and constitution. In this way, says Dr. zum Sande, it is possible that diphtheritis in passing to other individuals sometimes produces scarlatina, and sometimes diphtheritis.

# SURGERY.

## OPERATION FOR SECONDARY STRABISMUS.

*Secondary Divergent Strabismus, Caused by an Operation for Convergent Strabismus and Existing for Thirty Years; Cured by Transplantation of the Injured Muscles and Division of its Antagonist.*

By Hasket Derby, M. D., Boston.

It has been justly observed that the cosmetic effect of the operation for secondary strabismus may, as regards facial expression, be considered one of the triumphs of surgery. I have thought, therefore, that the following case might possess interest, even for those not specially interested in ophthalmic matters.

A lady, now fifty years old, was operated on for convergent strabismus of the left eye, at the age of twenty. Her condition, when she consulted me in January last, was substantially what it had been for the past thirty years. The left eye diverged some three and a half lines. Its motion inward was greatly restricted, the utmost effort of the internal rectus only sufficing to bring it one line short of the middle of the palpebral aperture. The vision of this eye was extremely imperfect, fingers being counted at six feet, while no letter of the test card could be recognized. The right eye was hypermetropic one-seventh, and had normal vision. On some occasions, annoying diplopia would be experienced.

For the relief of this deformity, the operation of simple division of the external rectus had been already proposed to the patient. The injudiciousness of this advice can best be shown by quoting the classic words of von Graefe:—

"For all *considerable diminutions of mobility, or for entire loss of the same, bringing forward the muscle is the only proper remedy*. Even if we succeeded by, for instance, partial excision or excessive setting back, in so reducing the strength of the abducens as to bring about a symmetrical relation between the amount of movement inwards, should we be entitled to regard this as a cure, properly so called? Inasmuch as the existing immobility depended, not on contraction of the antagonist, but solely on the fact that the activity of the internus had been circumscribed by too extreme a recession or imperfect union with the bulb, it is evident that the abducens must be brought into a like condition in order to establish an equilibrium, and what should we then have accomplished? We should have an eyeball immovable in two directions, and more prominent than before. This prominence of the eyeball gives a goggling expression, and thus is often more distressing than the deviation itself; while, in connection with the sinking of the caruncle, it produces a cosmetic effect in no way allied to that of ordinary divergent strabismus. A correction consisting in the setting back of the antagonist would, even if it were practicable, seem here less desirable than in cases of complete paralysis."

The following operation was consequently performed, January 4th of the present year.

The patient was etherized, and, beginning at the inner edge of the cornea, a broad flap of conjunctiva was dissected back towards the caruncle, a distance of six lines. Care was taken to thoroughly remove the subconjunctival tissue, in order that nothing might prevent the healing of the muscle at its new point of insertion. The internal rectus was found reduced in size, attached far behind and somewhat above its old position. It was divided at its insertion, dissected away from its attachments, brought forward and laid upon the cornea, spread out so as to half cover it. In this position it was secured by two sutures through the conjunctiva, above and below the centre of the cornea.

An incision was now made over the externus, and this brought into view. A single stout thread was armed with a needle at either end. One was passed into the centre of the insertion, as near the eyeball as possible, and made to emerge through the upper edge of the muscle. The second was passed in at the same point and brought out at the lower edge. The muscle being next divided, just outside the thread, the eyeball was moved readily in any direction by means of the two threads gathered into the hand of the operator. It was rotated as far inwards as possible, so that the edge of the cornea touched the caruncle, and the ends of the thread secured