degeneration, while those with their cells of origin above have a normal appearance; therefore, secondary degenerations, whether occurring as the result of experiment or disease, may be considered of traumatic origin and arising from conditions outside the neurone, very frequently due to vascular occlusion and local softening.

2. Primary degenerations are clinically and pathologically quite different from secondary. They arise as a result of altered conditions of the blood and lymph, due generally to the introduction or generation within the body of poisonous substances, and are insidious in origin, progressive in character, and generally fatal in termination. They are influenced by hereditary or acquired tendency to nervous degeneration, and election of the particular system or systems of neurones not only constitutes definite groups of clinical phenomena, which admit of empirical classification into definite diseases, but also show that certain poisons have elective affinities for particular systems of neurones; but the election of certain structures may also be determined by occupation and habits, which induce stress on some particular system of neurones; or vascular conditions may lead to circulatory disturbances, which will determine the appearance of degenerative changes earlier and their more rapid progress in certain parts of the nervous system than in others. In connection with the latter contributory factor, we have already referred to the reason why certain portions of the brain should show more atrophy and degeneration in general paralysis than others.

Again, I have found the left hemisphere, which presumably is used more than the right in all right-handed people, more often atrophied in general paralysis. The two hemispheres in this disease seldom weigh equally, and the left hemisphere in two-thirds of these cases weighs less than the right. We know that the speech affection is one of the most characteristic and earliest clinical phenomena of this disease; possibly this difference in the weights may be the result of excessive activity of the left hemisphere while in a process of decay. At the same time, this tendency of the left hemisphere to waste more rapidly than the right might be explained on mechanical principles, for venous congestive stasis might take place more easily in the left hemisphere than in the right, owing to the fact that the blood in the internal jugular vein on the right side has a more direct course to the right auricle than the left.

NOTES.

¹ Exner's method is as follows: Small pieces of brain, 1 c.cm. in size, are placed in 1 per cent. osmic acid for 5 to 10 days: cut in alcohol with a wet knife; after sticking on cork with shellac, the sections, which must be very thin, are mounted in glycerine. If they are allowed to remain in alcohol they spoil; they are best transferred on a section-lifter in a drop of strongly-ammoniated water. The preparation should be examined at once; the essential in this process is the use of the ammonia, whereby the neuro-keratin supporting structure is swollen up into a homogeneous mass. The finest fibres of the cortical layers are demonstrated remarkably well by this method. ² Liebreich and Diakonow considered that protagon was a mixture of lecithin and cerebrin, but numerous researches by Gamgee, Blankenhorn, Baumstark, Kossel, Freytag, and Ruppel have shown that protagon is a single chemical substance, without, however, its precise constitution being determinable. Noll, in an interesting paper refers to these researches and describes a method for the quantitative estimation of protagon. By this method he was enabled to show that protagon rapidly diminished in quantity in degenerating nerves, and finally completely disappeared. He made comparative quantitative estimations of the two sciatic nerves after cutting the nerve on one side in dogs and horses. The protagon diminished in quantity, until on the twenty-eighth day it had completely disappeared. In one case he examined the central ends of the sciatic nerves, and found a considerable diminution on the side of section. He also did an experiment relating to phosphorus, and his results, he states, are in agreement with our results with regard to the splitting up of lecithin. Choline can be detected chemically in the blood and cerebro-spinal fluid in the following manner: The blood or fluid is mixed with two or three times its volume of absolute alcohol. The filtrate is evaporated over a water bath to dryness. The residue is taken up with absolute alcohol and again filtered; the filtrate is evaporated to dryness and treated with 15 per cent. alcohol in distilled water and a drop of platinum chloride solution added. Octahedral crystals of the double salt of choline and platinum chloride are formed.

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ANTISTREPTOCOCCUS SERUM IN ERYSIPELAS.

By A. W. HARRISON, M.D. BRUX., M.R.C.S., L.R.C.P.,
Mossley, Lancs.

As antistreptococcus serum has not yet established itself as an efficient remedy in erysipelas, and as notes of cases treated with it, whatever the result, are useful in indicating its efficacy or the reverse, I offer no apology for the following brief account of a case treated by it.

Mrs. H., aged 26, was taken ill on April 11th, 1900, and complained of headache, backache, sore throat, and pain in the limbs. The next day, when I first saw her, the temperature was 104.6°, the pulse 130, the same symptoms persisted, and the nose was red, swollen, and blocked up. I diagnosed facial erysipelas, gave a saline aperient, and ordered 20 minims of liquor ferri perchloride with 2 gr. of quinine, to be taken every four hours, and the face to be covered with a mask of cotton wool.

The next day (April 13th) there was no doubt of the diagnosis, the eruption having spread on to the cheeks. That night, however, the face being very painful, the patient threw off the mask, and had the face constantly bathed with butter milk. The next morning she was much worse, the temperature 105°, the face a deep red, and the eruption had spread to the eyelids and forehead. I prescribed an ointment consisting of equal parts of lanolin and ichthyol to be smeared over the face, and ordered 4 grs. of quinine to be taken every six hours, alternating with half a drachm of liquor ferri perchloride, which was also taken every six hours. The diet consisted of peptonised milk and Brand's beef essence (plain milk caused vomiting).

On April 15th the submaxillary region was involved, and the iron was dropped, as it caused vomiting and diarrhoea. The patient was delirious, and half an ounce of brandy was given every four hours. By April 16th the patient was so unconscious that all the excretions were passed under her, and half an ounce of brandy was being administered every hour. On April 22nd, the temperature being 104° and the pulse 120 and very thready, digitalis and strychnine were given with the quinine, the hair was cut short, and an icebag applied to the head, the delirium being of a low muttering character. A bed sore had formed over the sacrum and another on one buttock.

On April 24th she was practically moribund; the pulse could hardly be felt and could not be counted. At 10 A.M. I injected 20 c.cm. of Burroughs and Wellcome's antistreptococcus serum under the skin of the abdomen. At 2 P.M. she became conscious for a time, though she became delirious again. At 6 P.M. the temperature had come down to 103°, and the pulse was of better tone. I injected another 10 c.cm. of the serum. Next morning the temperature was 99.6°, the pulse 98, and decidedly stronger. I gave another 10 c.cm. of serum. She was quite sensible, and complained of the prick of the hypodermic needle. She had another 10 c.cm. of serum the same evening. The next day she was not delirious, had some tea and toast, and asked for the bedpan when she needed it. This day and the next two days she had a daily dose of 10 c.cm. of serum, and on April 27th she sat up and ate boiled fish for dinner. From this time onward convalescence was uninterrupted, and the temperature remained normal, except for a rise to 102.6° on May 6th, when she complained of pain in her joints. This was entirely subdued by 15 grs. of sodium salicylate every four hours, the temperature next morning being 99°.

One noteworthy feature of the case was the almost entire lack of sleep. At various times the following doses were given: Dover's powder, 15 grs.; sulphonal, half a drachm; potassium bromide, 2 drachms; sulphonal, 35 grs., with ½ gr. morphine; trional, 1 drachm; none of these drugs produced more than twenty minutes' sleep, until the temperature had reached the normal point.

I have no hesitation in saying that the antistreptococcus serum, of which she had 80 c.cm. in all, saved the patient's life; as, in my opinion, when it was administered, she could not have lived more than twenty-four hours without it.

IMPACTION OF A BEAN IN THE AIR PASSAGES TRACHEOTOMY: EXPULSION THROUGH THE WOUND: RECOVERY.

By BRUCE HAMILTON, L.R.C.P., M.R.C.S.,
Frognaal, N.W.

THE following case of a foreign body in the bronchus presents several features of interest:

A boy, aged 12, when playing with haricot beans, had his elbow accidentally jerked upwards, with the result that a bean which he had been holding in his hand was shot into his mouth; coughing and retching instantly commenced. Attacks of coughing and retching recurred at intervals of a few minutes, and a little blood-stained mucus was coughed up. There was no evident laryngeal stridor, but the boy was greatly alarmed, and repeatedly sought to relieve his distress by cramming his fingers down his throat, an act that at once induced noisy retching; a period of comparative calm invariably followed.

The right lung was found to be quite inactive, no air whatever entering it; the left lung acted well. The heart's action was irregular; the apex beat was situated at one inch outside the nipple line, and a loud systolic murmur was conducted into the axilla. On laryngoscopic examination the mucous membrane of the trachea was seen to be swollen and of a dull red colour. The bifurcation was not seen. The larynx presented a normal appearance. Throughout the case the voice remained faint and "ventri-locular;" there was never actual aphonia.

Thumping the back, with the patient both bent forwards and inverted, had no result. Copious vomiting ensued, induced by ipecacuanha wine, was followed by quieting of the symptoms, and he passed an excellent night. On the following morning a fit of coughing occurred, and the condition of the patient became rapidly worse. With the cessation of all intervals of quiet breathing the struggle for breath grew more fierce, and cyanosis deepened.

Eventually an incision was made into the trachea while the patient lay on the carpet, where he had fallen, unconscious, convulsed, and apparently *in extremis*. With the opening of the trachea respiration was re-established. The outer cannula of a tracheotomy tube was slipped in, which was later replaced by a pair of sinus forceps used to stretch the tracheal opening. On enlarging the wound in a downward direction a large bean was expelled from the trachea with great force. No tube was worn, and the wound was allowed to granulate. The patient made an uneventful recovery.

The correct treatment in such a case as that which has been related is unquestionably tracheotomy. It obviates the possibility of the foreign body getting into the larynx and causing sudden death. It is a difficult matter to get the patient's friends to realise that procrastination may cost the patient his life; for with one lung acting well and the patient gently slumbering they not unnaturally fail to see the need for surgical interference. In the case in point, perhaps if a little more time had been bestowed on laryngoscopic examination the pearly white shining body of the bean might have been seen, which might have accelerated permission to operate. It is probable that the bean was stuck fast like an egg in a cup, and was prevented from escaping during forcible expiration by reason of its upper extremity being driven into the mucous membrane. The theory that closure of the glottis was entirely due to a reflex spasm brought about by peripheral irritation of the tracheal nerve endings does not seem to explain the case in its entirety.

The rapid onset of the asphyxia towards the last may be partly explained by the peculiar nature of the foreign body; the testa would take a long time to soften, and until that had taken place there could be no general increase in size; but once the substance of the cotyledons began to absorb moisture a great and relatively sudden expansion would occur. To Dr. MacFadden, of Hampstead, my thanks are due for timely and skilful assistance.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

SEPARATION OF CHONDRO-STERNAL JUNCTION WITHOUT FRACTURE.

SEPARATION at the chondro-sternal junction due to direct violence and uncomplicated by fracture, when it occurs in adults, is usually accompanied by fracture of the ribs or sternum. In children it may be the result of indirect violence (for example, swimming), and is then uncomplicated by fracture. This is explained by the cartilages being more yielding than in older people. Malgaigne quotes three cases of simple dislocation (that is, without fracture) of the costal cartilages forwards. Cooper mentions a dislocation of the fifth and sixth cartilages in a boy; Middeldorp mentions two cases. Hamilton cites a dislocation of the fourth cartilage; Professor Gross says he has met with several. The comparative rarity of the accident has led me to think it worth while placing this case on record.

On May 7th, 1900, I was called to see a miner who had been violently assaulted by a fellow-workman. I found him lying on his back in great distress and evidently suffering from severe shock. He was pale and almost pulseless. His breathing was extremely painful and shallow. On examination, I found some superficial abrasions on the sternum, but there was no deformity. Auscultation and palpation revealed no signs of fracture. In view of the collapsed condition I ordered hot fomentations to be applied to the precordia and

gave him brandy. I then administered a sedative containing a little opium and potassium bromide.

As I was not satisfied that there was any fracture, and wishing to disturb the patient as little as possible, I did not apply the usual strapping and bandage to his chest. The following day there was no improvement. The breathing was still very shallow and painful, but there was no sign of any deformity. After auscultation I applied strapping across the sternum and encircled the chest in a broad bandage. The patient expressed himself greatly relieved by this. On the fourth day after the injury he had a violent attack of palpitation, and said he felt as if he were going to die. The next day he was much better, and could breathe more freely. It was now manifest for the first time that there was a separation of the second costal cartilage from the sternum, at the side of which it formed a small prominence. A distinct click could now be heard and felt with the respiratory movements. I applied a pad of lint over the displaced cartilage, and maintained it in position by strapping; finally a linen bandage was wound round the chest. I attribute the fact that the dislocation only became apparent some days after the injury to the freer expansion of his lungs as respiration became less painful.

Barnsley.

S. GROSS, M.B.Lond.

A SIMPLE METHOD OF FIXING BLOOD FILMS.

FOR some time past I have been experimenting with the object of obtaining a simple and expeditious method of fixing blood films. Eventually I have used the vapour of formic aldehyde with extremely good results.

I make use of a bell-jar which is open at the top. The diameter of the jar is 135 mm., and the height to the lower border of the neck about 150 mm. The opening at the top is closed by an indiarubber cork on the bottom of which is glued an ordinary cover glass.

When in use the dry cover glasses which it is desired to fix are laid upon a glass plate and covered over by the bell-jar. The cork is removed and a drop of formalin is placed on the attached cover at its lower end, and the cork immediately replaced. The covers, which must be quite dry, are left exposed to the vapour for fifteen minutes or more, but not longer than thirty minutes, after which they will be found to be well fixed.

The results obtained in this way are extremely good, but it is necessary to see that the films, when made, are thin, as thick films are liable to crack.

ALEXANDER EDINGTON, M.B.,
Director of the Colonial Bacteriological Institute,
Cape of Good Hope.

PSEUDO-HÆMOPTYSIS IN AN INFANT.

I WAS called to an infant five days old as the nurse had found blood coming from its mouth, and as the motions, which had begun to change, were again black. The child was perfectly well, and no lesion was to be found in the mouth nor in the mother's nipples. Next day I was sent for in haste, as the child had vomited a large quantity of half-digested blood, and the mæna was very marked. A renewed examination of the mother showed a very small crack in the right nipple, but no blood could be expressed, nor did the breast pump produce any; still, I felt confident of the origin of the blood. The breast was now given, and the child's mouth was found full of blood. Nursing was stopped. There has been no more blood, and the mæna has disappeared.

I have seen bleeding from the nipple before, but have never known a quantity swallowed (3 ounces at least) without the mother being aware of any unusual feeling, or noticing the blood at once. I could not make the nipple bleed with any manipulation.

Liverpool.

W. MACFIE CAMPBELL, M.D.

ASEPTIC BARBER SHOPS.—The Boston Board of Health has issued regulations providing definite rules for the management of barber shops. Mugs, shaving brushes, and razors must be sterilised after each separate use by immersion in boiling water. The use of powder puffs and sponges is prohibited. Similar regulations have recently been made by the Municipal Health Office of Padua.