tation, and pseudo-angina; the disease so induced, however, being devoid of the characteristic pangs, and the more aggravated phenomena of fatal angina*.

I now pass on to my own explanation of the relationship between the pain of true angina pectoris and the arterial contraction; also of the *modus operandi* of the nitrite of amyl in these cases.

I believe that we have as yet no data which will enable us to give a complete explanation of the pain of angina pectoris, whether it be a pure neuralgia with consequent inhibition of the cardiac contractions, or a result of cardiac muscular cramp, or of overdistension of one or more of the heart's cavities, or a combination, in some cases at least, of two or more of these conditions, must remain at present a matter of doubt. It is agreed on all hands, that the pain is often agonising, and that it often radiates into neighbouring sensitive nerves, more especially those of one or both arms. It is a fact ascertained by experiment, that electrical irritation of the central end of a mixed or a sensitive nerve, such as, for instance, the sciatic or the trigeminal, not only causes severe pain, but also excites by a reflex influence through the vaso-motor centre, a general contraction of the arterioles, with resulting high arterial tension. (See Vulpian, *Leçons sur l'Appareil Vaso-Moteur*, tome i, p. 237, etc.) I, therefore, venture to suggest that the high arterial tension, when associated with angina pectoris, is a secondary reflex result, and not the primary cause of the cardiac agony; and, further, that the remedial efficacy of the nitrite of amyl is due to its remarkable influence over some forms of neuralgia, and not to its relaxing effect upon the arterioles, except in so far as its antineuralgic power may depend upon its influence on the arterioles. My contention is that, in addition to the centripetal nervous influence which causes the pain of angina, there is an influence reflected from the nervous centre through the vaso-motor nerves, and thus exciting a more or less general contraction of the arterioles. It is probable that the peripheral arterial resistance, although not the primary or the main cause of the pain, yet adds to the distress and the danger of the paroxysm. We have no evidence to prove that in any case of angina there is a general arterial contraction. It may be that the arterial contraction, like the pain, is limited to one or both arms.

A true theory of the relationship between angina and arterial contraction, and of the manner in which the nitrite of amyl affords the remarkable relief which it often does, is not without practical utility, more especially as a guide in the selection of cases which are suitable for the employment of the drug. One of the most striking examples of great and permanent relief by the use of nitrite of amyl is afforded by the case of Dr. Herries Madden of Torquay, as recorded by himself. (*Practitioner*, 1872, vol. ix, p. 331; quoted also in Dr. Gairdner's essay, before referred to.) Dr. Madden states, that for a considerable time he had hesitated and neglected to employ the nitrite of amyl, in consequence of his belief that it was suitable only in those cases in which the face is pallid during the paroxysms. "As mine was flushed," he says, "I dismissed from my mind all thoughts of trying it, and paid the penalty of hasty conclusions in the shape of a large amount of acute suffering." The result of a first trial of five drops inhaled during a severe paroxysm "was truly wonderful. The spasm was, as it were, strangled in its birth; it certainly did not last two minutes instead of the old weary twenty, and so it continued. The frequency of the paroxysms was not diminished for some time; but then they were mere bagatelles as compared with their predecessors. Under these improved circumstances, strength gradually returned, the attacks became less and less frequent, and finally ceased." Now, in this case, although the relief from pain was associated with the usual evidence of the physiological action of the drug in relaxing the arterioles, the flushing of the face during the paroxysm forbids the conclusion that a general contraction of the arterioles was the cause of the cardiac distress, and that the relief was due to relaxation of the arterioles.

Dr. Talfourd Jones has given some good illustrations of the therapeutic value of the nitrite of amyl, not only in relaxing spasm, but also in rapidly relieving neuralgic pains. (*Practitioner*, 1871, vol. vii, p. 213.) Dr. Jones's experience has been confirmed by other clinical observers.

A few weeks since, I was consulted by a lady who for a fortnight had been suffering from severe facial neuralgia, which had resisted various remedies that had been employed before she came under my care. I advised her to drop five minims of nitrite of amyl on blotting-paper and to inhale the vapour. The pain was rapidly and completely subdued. In a few hours it returned in a milder degree, and it was again promptly removed by the amyl vapour, and, after three or four repetitions of the dose, the cure was complete. It would be interesting, and it might be instructive, to observe, whether during a severe attack of facial neuralgia or sciatica, there is any evidence of contraction of the arterioles, with resulting tension of the arteries.

In conclusion, I repeat the expression of my belief that the relief which is often afforded by nitrite of amyl during a paroxysm of angina pectoris, is due to its antineuralgic power, and not directly to its relaxing influence on the muscular arterioles.

OPHTHALMOLOGY IN ITS RELATION TO PRACTICAL MEDICINE.

By H. MACNAUGHTON JONES, M.D., M.Ch., F.R.C.S.I. & E.,
Surgeon to the Cork Ophthalmic and Aural Hospital, etc.

WHILE I was perusing the valuable and lucid exposition of Dr. Hughlings Jackson, on the relationship which at times exists between ocular motor disturbance and megrim, or it may be certain psychological phenomena, the following case presented itself to my notice. The man came to the extern department of the Cork South Infirmary and County Hospital. He is a very intelligent man, and the annexed description of his case is principally reported from his own statement of his past history and present symptoms. The interest which just now is taken in such cases, and the bearing of this one on the subject dealt with by Dr. Jackson, must be my excuse for here detailing the particulars.

W. A., smith by trade, aged 48, twenty-four years since, when living in London, fell into the hold of a vessel. He was removed to St. Thomas's Hospital. Mr. Solly, he says, pronounced his case to be one of "concussion of the spinal cord", with "displacement of the vertebrae" in the cervical region. He was insensible for some time after the injury; he had difficulty of feeling and inability to open the mouth; there was apparently no aphasia; he was salivated at the time; he remained in the hospital about eleven weeks. The right side was paralysed, with absence of sensation; the right extremities were useless. He was subsequently subjected to treatment by electricity, and became paraplegic; and both arms and legs were completely paralysed for the space of one year. He then recovered gradually, with a halting in the right leg, which remained ever since, and a difficulty in raising the right arm. He got a rheumatic attack about two years since, when the right eye became affected. At present, he has almost complete ptosis of the right eyelid; the pupil of the right eye is dilated; he has divergent strabismus of the same eye, pointing to paralysis of the third nerve. He can count fingers at any distance with the right eye. Vision $\frac{2}{3}$ (Snellen), with + 60 = $\frac{4}{3}$ nearly; I have not examined with prisms. When he walks with both eyes open, there is a peculiar halting gait and staggering of the right limb; with the sound eyelid closed with adhesive plaster, he gets complete megrim, and cannot walk (would fall); with the affected eyelid closed, he can walk much more steadily. There is ankylosis of the spinous processes of the third and fourth cervical vertebrae, with considerable enlargement of this region at the seat of the old injury.

Ophthalmoscopic Examination.—The fundus of the left eye is in every respect normal. The optic disc of the right eye is hyperæmic; the arteries are small and attenuated; the retina is otherwise normal.

Psychological Phenomena.—When "alone for any time, or violent", he sees visions of "men, women, and children, and animals of all sorts"; these gradually go on multiplying, and, when they "are at their height", he "fancies he sees the devil". He cannot describe all the shapes and forms he sees; they are so numerous. When this state has lasted for some time, he must lie or sit down. A feeling of nausea sometimes comes on, and he gets a sense of faintness; he never has had a fit. When he rubs the right side of the face with his hands, he says he gets a sensation as if he were subjected to an electric shock. The urine is of specific gravity 1015; no cloudiness, no deposit, no albumen.

EXAMINATION OF THE POSTERIOR NARES.

By ALEXANDER HODGKINSON, M.B., B.Sc.

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SINCE the invention, or at least discovery, by Czermak of the art of examining the nasal portion of the pharynx and the nasal fossæ by means of a mirror placed at the back of the throat, the art of rhinoscopy has established for itself a reputation not merely as an aid to diagnosis, but also as a means of facilitating treatment, which its daily employment only serves to enhance.

Experience brings the rhinoscopist into contact with a class of cases in which the relations of the velum palati to the pharynx and tongue necessitate artificial displacement of the former, whilst excessive irritability of the parts with which the "palate-hook" comes into contact

renders this instrument inadmissible. This circumstance, coupled with the fact that it monopolises the hand necessary for operating, or for the application of remedies, undoubtedly accounts for the disparaging terms in which its employment is spoken of by most writers on the subject.

As a substitute for the palate-hook, possessing all its advantages with few of its drawbacks, and as a means admissible in numbers of cases where the use of this instrument is excluded, I am in the habit of adopting a plan, the simplicity of which would certainly lead one to infer its previous employment, whilst perhaps, at the same time, explaining its want of notoriety.

A glance at the chief obstacles to a successful rhinoscopic examination shows them to consist either in (a) insufficiency of the distance between the soft palate and the posterior wall of the pharynx, or (b) in an extension in a downward direction of the attachments of the lateral margins of the soft palate to the pharynx, thus unduly limiting the space between the free margin of the velum and the dorsum of the tongue necessary for the adequate illumination of the rhinal mirror; and, lastly, (c) excessive irritability, which may complicate one or both the previous conditions.

Bearing in mind the precise nature of these obstacles, and recognising the desirability of a hand at liberty for operating, application of remedies, etc., the following directions become intelligible.

Placing the patient in the usual position and illuminating in the ordinary manner, having depressed the tongue with a rectangular tongue-depressor, I instruct him to hold it in position. Taking advantage of the insensibility of the uvula as compared with the neighbouring structures, I pass around it a ligature, tying sufficiently tightly to hold and yet to allow removal (practice soon determines this tension). Since this ligaturing of the uvula is not always unattended with difficulty, I have had constructed the following "uvula-snare", which, as its use obviates any difficulty in this respect, I will shortly describe.

It consists, as seen from the woodcut, of an outer hollow ring, A B C, the upper half being movable on the hinge H, and open along its internal margin; the lower half consists of the two tubes, A and C, united to the stem at the shoulder E, and communicating with corresponding perforations in it. The portion D consists of a semicircular tube open along its internal margin. The instrument is represented with the upper segment partially open, to show the position of the ligature when ready for use.

In preparing the instrument for use, the upper portion B being widely opened, an end of the ligature is inserted in one of the apertures in E, and drawn through the corresponding tube to the extent of about fourteen inches; an ordinary undrawn knot is now tied, and the same end of the ligature inserted into the distal opening of the other tube, and drawn out through the corresponding aperture in E. The lower portion of the loop having been arranged so as to lie in D, the upper portion is protected by closing B, when the instrument is ready for use.

The instrument being introduced, so as to allow the uvula to hang within the ring A B C, the free ends of the ligature are drawn tight, allowed to hang free, and the instrument withdrawn. If the proper tension have been exercised, the uvula and soft palate may now, by means of the ligature, be drawn forwards and to either side, whilst the examination is conducted by means of the rhinal mirror. This completed, and

the most favourable position of the palate for the attainment of the object in view having been thus determined, the free ends of the ligature are secured by the attachment of a small weight, and both passed over either ear, or one end over each ear, according as a lateral or median traction is found the most suitable. The operating hand is thus set at liberty, and may be employed under more favourable conditions than by any other method with which I am acquainted.

The ligature is usually easily removed by passing a bent blunt probe between the loop and the uvula whilst employing gentle traction by the free ends. In some specially unfavourable cases, where a satisfactory examination is not attainable on the first attempt, the object may be gained by a daily ligaturing of the uvula *high up* and stretching of the parts, thus occasioning their temporary relaxation, and, at the same time, familiarising the patient with the procedure; a circumstance tending materially to facilitate operations in these sensitive regions.

HODGEN'S SPLINT, AS USED IN GUY'S HOSPITAL.

By J. FARRANT FRY, L.R.C.P. (late House Surgeon).

FOR some time past, fractures of the femur (whether of the neck or shaft) have been treated in Guy's Hospital with the Hodgen's splint. The results have been so uniformly satisfactory, that an account of the splint cannot but be of service, and will, in all probability, lead to its more frequent use.

A pole, about seven feet in length, is fastened to the foot of the bedstead, not at a right angle to it, but forming, with it, an angle of about 115 deg.; and, to make it more secure, it is better that the end of the pole should be fixed in the ground by a spike. To the upper end of this pole a pulley is attached. A piece of strapping (of which Leslie's brown holland is perhaps the best) is placed along each side of the limb, leaving a stirrup projecting beyond the foot, in which a piece of wood is placed, having some cord fastened to it. Thus vertically placed, strapping is now securely bound to the leg by horizontal pieces, extending from the ankle to as near the seat of fracture as possible, but, of course, omitting the knee.

The splint itself consists of an iron rod, extending on each side of the leg, from the groin on the inner and rather higher on the outer side, to a few inches beyond the foot, where the two rods are united by a transverse one; the two pieces are further fastened together by two or three rods arching across the limb. The cord fastened to the stirrup is now tied securely to the transverse piece, bringing these two almost close together.

To support the leg in the splint, something must pass between the two rods and beneath the limb. For this purpose, strips of bandage may be sewn to the rod on one side, and each separately carried beneath the limb and fastened to the rod on the other side, after being drawn sufficiently tight to fit the inequalities of the leg. A cord is now fastened by its ends to the outer and inner rods, rather above the knee, leaving a large loop, at the centre of which is a double-block pulley, round the lower wheel of which the cord runs. Another cord is fastened in a similar manner midway between the knee and ankle, and leaving, like the first, a large loop passing through another double pulley. The splint containing the limb has now to be raised from the bed by a third cord, which passes through the upper wheel of the two double-block pulleys, and thence round the pulley attached to the pole at the foot of the bed.

By this means, the limb can be raised to any height, the most convenient being an angle of about 135 deg. with the recumbent body. The lower end of the bed should be raised on blocks, to prevent the patient from being dragged down by the extension which is exerted.

Until this splint was introduced, the long outside-splint with weights was generally employed; but whether this plan, the perineal band, or double inclined plane, was adopted, the results were so bad that Mr. Cooper Forster, in the *Guy's Hospital Report* for 1875, says: "If an adult fractures his thigh, it is all but certain that there will be shortening of an inch; and that the method adopted to keep up extension does not matter, provided always that, whatever the plan may be, it is overlooked with care, the result will be about the same."

The advantages claimed for the Hodgen's splint over others are: 1. Less shortening of the limb; 2. Greater comfort to the patient, who is able to sit up in bed, to turn on either side, and conveniently to use the bed-pan; 3. Less liability to bed-sores in aged people. In fact, there is no one point in which (for an adult) any other treatment is to be preferred.

The results, as regards shortening of the limb, may best be shown by giving statistics of an equal number of cases. Out of seventeen unselected cases of fracture of the shaft of the femur, treated in 1874 by