is the case in the infantile type of face; or (2) whenever the apex of completed N.B. Δ is much above its average position at the bridge of the nose. The latter condition implies unduly long sides to the N.B. Δ , and is observed specially in the square-jawed type of face. How intimately these trigonometrical relations are connected with character-expression is shown in the lessened N.B. angle of the fixed smile of photographic portraiture, and how necessary it therefore is in an inquiry of this kind to obtain these facial angles whilst the features are at rest.

Before concluding I shall briefly refer to the mechanism whereby the creeping of a wrinkle as age progresses is presumably induced. Many of the observations already recorded cannot otherwise be satisfactorily explained unless we admit that this slow change of position takes place occasionally. I have examined the successive portraits of eight persons photographed at different periods of their lives. These pictures show that a divergence of 7 or 8 degrees in the obliquity of the N.B. angle may in some cases occur within a few years. The cause of the "creeping" must, I take it, be sought for in the prolonged hypertone of some of the muscular areas bordering the wrinkle and the hypotone of others antagonistic to them; and these excito-motory changes, again, may be due to continuous psychical exaltation or depression, so often associated with success or failure in the schemes of life.

The following figures may be provisionally accepted:

Average Value of Naso-buccal Angle in 149 Adults
(above 17 Years).

	Adults.	Men.	Women.
At all ages (100 M.)	55.3°	53.4°	60.9°
Forty-two above 70 (34 M.)	51.1°	50.7°	54.1°
One hundred and seven below 70 (65 M.)	57.6°	54.7°	62.4°

REFERENCES.

- ¹ A Clinical Study of Neuralgias and of the Origin of Reflex and Transferred Pains, *New York Med. Journ.*, July 23rd and 30th, 1887.
² Disturbances of Sensation, with especial reference to the Pain of Visceral Disease, *Brain*, vol. xvii, pp. 339-480. ³ Lavater (1772) noticed the divergence of the "lineaments or traits of the cheeks," *Essays on Physiognomy*, translated by Thos. Holcroft, n.d., p. 474. ⁴ In adults the angle of the jaw is about 120 degrees or less, in infancy 140 degrees or more; in the edentulous it again becomes widened to 130 or 140 degrees (see Humphry, *The Human Skeleton*, p. 293; *Quain's Anatomy*, ninth edition, vol. i, p. 56).

UNUSUAL CASE OF FACIAL PARALYSIS.*

By H. H. B. CUNNINGHAM, M.D., F.R.C.S.I.,
M.R.C.S.ENG.,

OPHTHALMIC SURGEON, ULSTER HOSPITAL FOR CHILDREN AND WOMEN, ETC.; EXAMINER IN OPHTHALMOLOGY AND OTOLGY, ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE facial nerve, whilst in the aqueduct of Fallopius, bears a close relation to the middle ear. After leaving the chamber situated behind the hiatus Fallopii, wherein the genu is placed, it passes backwards and downwards at right angles to its previous direction in the upper and posterior part of the inner wall of the tympanum; here it is in relation to the fenestra ovalis below, the ampullary ends of the external and superior semicircular canals above, and the vestibule to its inner side.

ETIOLOGY.

The main etiological factors of facial paralysis may be grouped under three headings:

1. *Central*:
 Tumours in and at the base of the brain.
 Meningitis.
 Nuclear degeneration, as in labio-glossal paralysis.
2. *Osseous* (in the Fallopiian canal):
 (a) Inflammation extending to the osseous walls, thence to the sheath and to the nerve itself.
 (b) Caries and necrosis of the aqueduct, the destruction extending to the nerve itself.
 (c) Injury to the nerve during operations on the accessory cavities of the middle ear.

3. *Terminal* (after exit from the stylo-mastoid foramen):

- (a) Injuries to the nerve.
- (b) Implication in cellulitis and growths in the neck.
- (c) Influenza, diphtheria, and syphilis, giving rise to neuritis.
- (d) And, finally, that type, yeclipt rheumatic, frequently met with, and usually ascribed to a cold or draught on the face, and for which sometimes no cause can be assigned.

But it is a matter of some doubt whether all these so-called rheumatic palsies should be ascribed to colds or draughts. Lake¹ states that they are frequently due to a transient acute inflammation of the middle ear, in which suppuration has not taken place, and quotes Sir William Dalby as having pointed out, in 1872, that many of these cases, said to have resulted from exposure to draughts, were frequently due to an acute otitis media, "the pain of which was so slight and evanescent as to have been quite overlooked both by patient and physician."

It is to the second or osseous division that the subject of these notes applies. An acute inflammation in the tympanum may easily extend to the osseous walls of the Fallopiian canal, and thence to the sheath, and so to the nerve itself; the accompanying infiltration and exudation, by exerting pressure on the nerve in its unyielding surroundings, will suspend its physiological activity. Then, usually, as the inflammation resolves and the pressure lessens, the nerve recovers more and more of its function.

Therefore this type is not serious.

On the other hand, in a case of chronic otorrhoea, no matter how small a quantity of pus is being discharged into the meatus, the onset of facial paralysis is a serious symptom, indicative of a grave condition both of the nerve and of the patient himself, for it shows that necrosis is taking place in the temporal bone. The disease may be situated in the middle ear, or perhaps in the antrum as well; but, wherever placed, the paralysis indicates that necrosis is extending to the Fallopiian aqueduct, and thence to the nerve itself. The close relation of the aqueduct with its contained nerve to the labyrinth has already been mentioned, therefore it will readily be understood that the facial paralysis may easily be a symptom of that very serious condition—suppurative labyrinthitis. As a matter of fact, investigation² has shown the facial nerve to be involved in no less than 83 per cent. of cases of labyrinthine necrosis.

Therefore this symptom is a clear indication for early surgical interference.

TERMINATIONS OF FACIAL PARALYSIS.

The terminations of this condition may be briefly summarized as follows:

1. Return to normal function.
2. Persistent paresis of the whole or of part of the nerve.
3. Complete permanent paralysis.

Maggie G., aged 9, came to the Ulster Hospital in June, 1907, stating that she had been unable to close her right eye for the past fortnight, and gave a history of previous double otorrhoea. She was unable to wrinkle any of the muscles on the right side of her face, the right palpebral fissure was widely open, the lower lid showed a tendency to fall away from the eye, and on telling her to close her eyes the eye itself was rotated upwards, but the eyelids did not move; she was unable to lift her lips to show her teeth on the right side. Owing to deafness, she had to be spoken to loudly and distinctly. A little thick pus was found in the right meatus, and the greater part of the right tympanic membrane had been destroyed; no history of headache, vomiting, or pain. She was admitted, and on June 6th a complete post-aural operation was performed on the affected side. The cavity was packed and the wound sutured up completely. Twelve days later she was discharged and ordered to attend daily to have the wound dressed, and for galvanism, the paralysis being only slightly less.

July 22nd. The paralysis not cleared up yet, though less; attendance for galvanism very irregular; very little scar on site of external wound.

August 15th. Paresis decreasing; can now shut right eye and open her lips so as to show her teeth on the right side; still very irregular in attending for galvanism.

October 21st. Hearing equal in each ear, though a little sub-normal, as low tones are not well heard. Still slight paresis on right side of face.

On May 25th, 1908, practically twelve months later, the patient presented herself at the hospital with an almost complete paralysis of the left side of the face, the onset having taken place two days previously.

She was unable to close the left eye or lift the lips so as to show the teeth on that side; the furrows in the cheeks were obliterated; no history of pain in the ear or of otorrhoea, no vomiting or vertigo. Patient had to be spoken to in a fairly loud voice, owing to deafness. The left tympanic membrane has been almost wholly destroyed; the handle of the malleus can be seen foreshortened and protruding *in situ*, but deprived of

* Read at the spring meeting of the Ulster Branch of the British Medical Association, Londonderry, May 8th, 1909.

its usual support of tympanic membrane; pus seen in the tympanum.

May 28th. Large perforation seen in the posterior superior wall of the meatus $\frac{1}{2}$ in. from the orifice, debris presenting. Complete post-aural operation performed on left side, debris found in tympanum, cavity packed and wound closed.

May 29th. Patient looks well, paralysis not so marked.

June 1st. Wound healing well; can now close left eye, and slept during the previous night with eye closed.

June 4th. Paralysis fast resolving; can close eye, lift the lips, and smile now; wound healing, sutures removed.

June 11th. Wound quite healed; paralysis cleared up considerably; still deaf, having to be spoken to loudly.

June 17th. Paralysis almost cleared up, hearing much improved; can hear ordinary voice now, whereas had to be spoken to in a loud voice previously.

June 22nd. Paralysis cleared up; can elevate lips on this side better than on the right side, but left palpebral fissure still a trifle more open than right; can screw up both eyes easily.

It must be somewhat unusual to meet a case presenting similar features on each side of the face at an interval of almost exactly twelve months. It is instructive, too, in comparing the different periods of time which the two nerves required to return to their normal function, the right taking quite five months, though probably less would have sufficed had she attended regularly for galvanism which was ordered, as the actual duration of the paralysis prior to operation was uncertain, and with the view to remedy the soft and atonic state of the facial muscles, but unfortunately, owing to her irregularity of attendance, no true deduction can be made as to the effect of this treatment. On this side the paralysis had existed certainly for a fortnight, and probably for longer, whereas on the left side it had only shown itself two days prior to advice being sought, and cleared up entirely in less than a month after operation.

The rapidity with which the paralysis cleared up on the left side as compared with that on the right at once suggests the advisability of early surgical interference in cases of this sort, in order to save the nerve alone from permanent injury, and further to save the patient from a serious osseous lesion in the temporal bone, of which the facial paralysis is an outward and visible sign.

REFERENCES.

¹ R. Lake, *Diseases of the Ear*, p. 103. ² Politzer, *Diseases of the Ear*, p. 477.

A CASE OF MULTIPLE PLEXIFORM NEUROMA ASSOCIATED WITH BROWN PIGMENTATION OF THE OVERLYING SKIN.

By CECIL E. REYNOLDS, M.R.C.S., L.R.C.P.,

ASSISTANT MEDICAL INSPECTOR SCHOOL CHILDREN,
BERKS EDUCATION COMMITTEE.

AFTER reading Mr. Lenthal Cheate's interesting paper in the JOURNAL of June 12th, it occurred to me that the notes of the following case might have some bearing upon the question of neurotrophic influence in pigmentation.

A female child, aged 5 years and 4 months, came under my observation in April last during the routine inspection of the Berkshire schools. There was a swelling of the left side of the neck behind, extending from the left superior curved line of the occiput above, down over the complexus as far as the level of the first dorsal spine below, and extending round in front as far as the anterior border of the left sterno-mastoid muscle at the middle of its length. Posteriorly it was limited to the left side of the neck by the ligamentum nuchae. Soft and semisolid to the touch over the occipital bone, the tumour below was found to consist of firm masses, feeling like glands, ranging in size from a hazel nut to a pea, and more or less bound together by adhesions. The growth was thickest between the posterior border and the upper third of the sterno-mastoid and the outer border of the complexus. The skin over the whole of the tumour, with the exception of the occipital part, was stained brown. This stain was most marked over the prominent belly of the complexus, but extended as far as the middle line of the neck in front and also lower than the tumour below, becoming fainter and mottled at the edges. The opposite side of the neck was very faintly pigmented. The photograph (which unfortunately had to be taken in the country) is intended to show most of this pigmentation as well as the scar of the operation. The history is as follows:

The pigmentation was first definitely noticed at the age of 2 years. (The mother is quite clear on this point, as her friends used to remark that she had omitted to wash the child's neck.) It began at what is now the upper part of the stain behind, and extended slowly downwards and forwards. It was not until more than a year later that a swelling was noticed to commence beneath the upper part of the pigmented skin. There was no pain, but slight tenderness, which had of late increased, neither had the child suffered in general health. The child had enlarged tonsils when seen by me, but no other physical signs to aid or complicate diagnosis. The family history was negative.

As I was at a loss for a positive diagnosis, and the practitioner in attendance was equally anxious to settle any doubts as to the nature of the swelling, we removed the child to University College Hospital, where it was seen by Mr. Wilfred Trotter, who made the diagnosis of plexiform neuroma. We had the opportunity of witnessing the removal of the tumour by Mr. Trotter later in the day, when it was seen to consist of lobulated masses of fibrous tissue held together by strands, and almost inextricably mixed up with the muscle fibres in the neighbourhood, which latter fact rendered removal most difficult. After the greater part had been removed, it was decided to leave the rest for a second operation.

A, Scar of operation; B, maximum pigmentation of skin.

I am informed by Mr. H. M. Davies, surgical registrar to the hospital, who examined microscopical sections, that bundles can be seen which resemble normal nerve bundles, but that it is doubtful whether they contain nerve fibres, the contents in the main consisting of short curling strands of fibrous tissue with well-marked nuclei. The wound healed by first intention, but the scar is now (a month later) becoming keloid.

I am indebted to Dr. D. G. Kennard, under whose care the child is, for permission to publish this case.

A CASE OF SO-CALLED DELAYED CHLOROFORM POISONING.

By CONRAD DE L. CAREY, M.B., B.C. CANTAB.,
GUERNSEY.

THE following case seems to me to be typical of the condition described by Dr. Guthrie as "delayed chloroform poisoning" in a child the subject of chronic suppuration in the form of a caseating abdominal gland. The rapidity of death and low range of temperature are against any form of sepsis introduced at the time of operation.

I was sent for recently to see a boy, J. H., aged 3 years 2 months, who had been "out of sorts" for the week previous to my visit, suffering from diarrhoea. The temperature was