phlyctenule itself is of tuberculous histological structure, or that it contains the tubercle bacillus. Nevertheless, it is now widely believed that, practically speaking, the characteristic lesion occurs only in those who are the subjects of tuberculosis, latent or otherwise.

The main facts that have led to this change of opinion are:

1. The frequency with which a family history of tubercle can be obtained from the subjects of phlyctenular disease.

2. The frequent coexistence, along with phlyctenular disease, of other manifestations of tuberculosis—as, for example, enlarged glands or joints, otorrhoea with or without mastoid disease, phthisis pulmonalis, dactylitis, and scrofuloderma.

3. The fact, as shown by the experimental work of J. B. Nias and Leslie Paton,¹ that the blood of patients suffering from phlyctenular disease behaves in a manner which is typical of a definite tuberculous infection. As the result of examination of the blood in upwards of fifty patients with phlyctenular disease, these authors claim that their observations of the opsonic index go far to support the hypothesis that phlyctenular ulcers are due to the escape of attenuated or dead bacilli from some distant focus, identified or otherwise, of tuberculous disease.

4. The positive result obtained in phlyctenular cases by employing the Koch, Wolff-Eisner-Calmette, von Pirquet, or other specific test for tubercle (Stephenson, Derby, Weekers, etc.).

The observations with von Pirquet's test recently made by us at the Queen's Hospital for Children, London, confirm the view that phlyctenular disease is a tuberculous manifestation, or, at least, that it occurs in tuberculous subjects. During the last few months we have employed the von Pirquet vaccination in 20 cases in children, whose ages have ranged from 2 to 12 years. The series has included five males and fifteen females. Practically every kind of phlyctenular disease was experimented on, varying from recent conjunctival or corneal eruptions to long-standing scars upon the cornea, which had almost certainly resulted from former attacks of phlyctenular inflammation. The cutaneous reaction, of course, varied much as regards intensity, but the important point was that a positive result was obtained in every instance. In two cases, however, the inoculation was made more than once before a positive result was produced.

It should be added, finally, that a notable proportion of our cases, estimated at 50 per cent., presented more or less obvious signs of tubercle, medical or surgical, while an even larger proportion, estimated at 75 per cent., gave a family history of tubercle.

REFERENCE.

¹ *Trans. Ophthalmological Society*, xxvi, 1906, p. 232; and *Lancet*, December 1st, 1906.

A SERIES OF CASES OF CONGENITAL OPTHALMOPLÉGIA EXTERNA (NUCLEAR PARALYSIS) IN THE SAME FAMILY.

By HENRY COOPER, B.A., M.R.C.S., L.R.C.P.,
SURGEON, R.N.

"This series of cases came under my notice a short time ago, and is, I think, of sufficient interest for publication.

A youth of 21 (son A. in table) came to me with a small foreign body in his right eye, which was easily removed. He had marked ptosis on both sides, and on further examination I found that all the external eye muscles were paralysed. The only movement of which the eyeballs were capable was an almost imperceptible tremor when he made an effort to follow a moving object across the field of vision. The pupils both reacted perfectly to light and accommodation, and his sight was normal. He had served his time as a boilermaker, and had never had any difficulty in doing his work. He stated that he was "born like it," and that his father was similarly affected.

His father I also interviewed, and he gave me all he knew of the family history, which I have embodied in the accompanying table, in which cases are shown in italics.

The father, T. R., aged 57, a sailmaker, stated that he had been affected from birth, but had always had good eyesight.

When working he always held his head on one side, as it came natural to him to use his left eye most, owing to an external squint in the right eye. He had almost complete paralysis of both levator palpebrae superioris muscles and complete paralysis of all the external eye muscles, except the right external rectus, which had enough power to cause a small degree of external strabismus. The eyeballs were quite immovable, there being no tremor even when attempting to follow a moving object across, or up and down, the field of vision. The internal ocular muscles were normal and the sight good. He enjoyed good health, and so far as he knew there was no history of any diseases prevalent in the family.

He stated that his father and grandfather were both born with the same affliction, but had no squint, the paralysis being complete save for the internal ocular muscles (grandfather and great-grandfather in table). He had two uncles, one affected, one not. He had two aunts, neither affected. He had two brothers, one affected and one not; the one who was not affected died some years ago in an asylum. Of his own children he said:

I have had six. The first and third died in infancy, and so far as I know were not affected.

The second, my eldest son, is not affected. He is married and has two children who are both unaffected.

My fourth is the boy you have seen. (Son A. in table.)

The fifth, a daughter, is not affected.

The youngest, a boy, is affected, but not so completely as I am; he can raise his eyelids a little bit, but his eyeballs are fixed. (Son B. in table.)

It is interesting to note that so far as he can remember

1. No female member of the family has been affected.

2. No case has ever developed after birth, but all have been congenital.

3. The ptosis has been almost complete in all cases except that of his youngest son, who is the first of the series in whom the affliction has appeared in a lesser degree.

ON MUCOCELE OF THE NASAL SINUSES, AND ITS COMPLICATION BY OPTIC NEURITIS.

By ROBERT FULLERTON, M.D.,

SURGEON FOR THROAT AND NOSE, OUTDOOR DEPARTMENT, GLASGOW
ROYAL INFIRMARY.

DURING the last few years a considerable amount of attention has been given to affections of the nasal sinuses which cause ocular disturbance. In such cases the pathological factor is generally suppuration in the frontal or ethmoidal sinus, or in both, and the symptoms, if not clamant, are tolerably well marked. The three cases which I now record differ from the suppurative variety in that they followed a slow and unobtrusive course; nevertheless, they present points of interest and practical value, especially in regard to the close and important relationship between these sinuses and the eye.

Two of the patients were referred to me from the Ophthalmic Institution; and I have to thank Dr. Maitland Ramsay for supplying notes on the condition of the eyes, and for allowing me to publish the cases.

CASE I.—*Mucocele of the Right Ethmoidal Region causing Optic Neuritis.*

K. G., aged 20, a laundress, was referred to me on May 28th, 1909, from the Ophthalmic Institution by Dr. Maitland Ramsay for nasal treatment. The patient, who looked strong and healthy and gave a good family history, had been employed in a public laundry for the previous six years. For three years she had frequently suffered from headache of the right frontal region, which yielded to powders obtained from her doctor, but she was unconscious of anything being wrong

with her eyes until about three months before, when a prominence of the right was noticed.

I found swelling of the soft tissues of the upper part of the right orbit, with proptosis. There was a moderate amount of adenoid tissue present, but apart from this the naso-pharynx was normal; no difference could be detected between its right and left side, and the posterior end of the right middle turbinal was of the average size and appearance. The left nasal passage was healthy but narrowed by a moderate deflection of the septum to that side. This deflection left the right passage wider than usual, and its ethmoidal region was occupied by a rounded swelling which bulged forwards as well as towards the septum, which it touched. The outline of the middle turbinal could be traced on its inner side; when probed, it felt firm and distended, and its mucous covering, except for polypoid thickening, appeared normal.

On May 30th, with cocaine anaesthesia, the anterior bulging portion of the swelling was opened with cutting forceps, disclosing a thin-walled cyst, tensely filled with a greyish-yellow viscid secretion, which escaped under pressure to the amount of over a fluid ounce. The anterior, and a considerable portion of the inner wall was removed, so as to lay bare the cavity and ensure free drainage. It was lightly packed with iodoform gauze for twenty-four hours, and for a week thereafter the dressing consisted in swabbing out the parts with hydrogen peroxide and wearing a pledget of sterile gauze in the nostril.

Report on the Eye Condition.—"The right eye, which has been prominent for the last two months, is pushed downwards and forwards. Exophthalmos is not reducible. In the exophthalmometer—right eye=17 mm.; left eye=11. Tachycardia and Stellwag's sign are absent, and the pupils are active. Ophthalmoscopic examination shows optic neuritis in the right eye, while the left fundus was normal.

Vision: R. $\frac{5}{60}$ C. + .50 D. sph. = $\frac{5}{60}$, } Tension normal.
L. $\frac{5}{60}$

After operation the prominence of the right eye immediately disappeared. In the exophthalmometer—right eye=12 mm.; left eye=11. On June 1st the headache was absent; and on June 8th the optic neuritis had practically disappeared; and on June 22nd the patient was dismissed. Sections of the cyst wall showed the lining membrane to be largely composed of fibrous tissue, with epithelium practically gone. Cultures of the contents of the cyst remained sterile."

In this case the whole of the ethmoidal region was taken up by the cyst cavity, which extended backwards, upwards, and outwards, evidently terminating in the most posterior ethmoidal cell at a distance of 6.8 cm. from the nasal spine. The lining membrane, except on its posterior wall, where it had a thinned, greyish look, was bright red in colour. The patient, when seen eight months later, was in good health and free from symptoms. The edges where the cyst had been opened into had contracted little, but in the cavity around the opening a considerable development of oedematous granulation tissue had taken place. This granulation tissue had all the appearance of small vascular polyps, such as in my experience commonly follows free opening of the ethmoidal cells. The immediate improvement which followed the opening of the cyst would point to an interference with the vascular supply as the cause of the symptoms. We are familiar with the variability of the mastoid cells and the position of the lateral sinus, and it has been found that this variability has a certain relationship to the type of skull. The skull in this case was of the brachycephalic type. It is conceivable that the shape of the skull may have influenced the contour and relationship of the sphenoid and ethmoid bones so as to predispose the optic foramen to pressure from dilatation of the posterior ethmoidal cells.

CASE II.—*Suppurating Mucocoele of the Right Ethmoidal Region, with External Swelling.*

R. McL., aged 44, male, a labourer, was seen by me at the Royal Infirmary on September 19th, 1909. There was a swelling of his nose at the inner canthus of the right orbit, which was red, soft, and tender on pressure, and which had been present for two months. The patient stated that during the last few years a similar swelling had occurred on several occasions in the same position, and had spontaneously disappeared.

A deflection of the septum obstructed the upper part of the right nasal passage, and purulent material was seen escaping from between the deflected portion and the external wall. His eye was in no way affected, nor was there any subjective pain.

In order to get access to the ethmoidal region a submucous resection of the septum was performed. Eight days later the anterior half of the middle turbinal with part of the surrounding tissue was removed. A smooth-walled suppurating cavity, which occupied the position of the anterior ethmoidal cells, was thus opened into. Immediately thereafter the external swelling began to subside, and practically no more pus was seen. On October 2nd the swelling had quite gone.

I regard this case as that of a mucocoele of the ethmoid, that had become secondarily infected by pyogenic organisms, and that had periodically discharged parts of

its contents into the nose. The external swelling presumably arose from an extension outwards of the inflammatory process at the junction of the lacrymal bone with the ascending process of the superior maxilla, and in time it would probably have broken down and discharged at this point.

CASE III.—*Mucocoele of the Left Frontal Sinus, involving the Anterior Portion of the Ethmoidal Region.*

N. C., aged 22, a waitress, was referred to me from the ophthalmic institution by Dr. Wright Thomson on March 6th, 1908. She was anaemic, but otherwise appeared to be strong and healthy. Attention was first drawn to her left eye four years before, when it became prominent and bloodshot. Glasses and a lotion which she received at this time had kept it well until two months previously, when tears began to come over the eye, and a swelling appeared at its inner canthus.

The left eyeball was proptosed and displaced outwards, and a fullness extended upwards and outwards from the internal inferior angle of the orbit towards the supraorbital notch. Closing the eye caused this fullness to become more prominent. The skin covering it was unaltered and freely movable. It was not tender on pressure, but firm and resistant, and apparently due to bony distension. A good anterior and posterior rhinoscopic view was obtained. The right nasal passage was found to be narrower than the left, the naso-pharynx free and healthy, and no purulent secretion could be seen. The anterior end of the left middle turbinal, which was enlarged and showed polypoid hypertrophy of its mucous covering, lay close against the septum, appearing as if it had been forced over by distension of the parts lying external and anterior to it.

On March 29th, with cocaine anaesthesia, a vertical incision was made into the thin bulging portion, external to the anterior end of the middle turbinal. One blade of a pair of cutting forceps was introduced through this, and the anterior end of the turbinal and adjoining parts removed to an extent sufficient to admit the tip of the little finger. The contents of the cavity thus opened into consisted of clear serous fluid, greyish mucoid material, and thick yellowish secretion like the yolk of egg. These various forms of secretions were distinct the one from the other. A large quantity was evacuated, but, as the patient became very excited, the amount could not be estimated, nor was an examination made of the contents. The cavity presented an elongated funnel-shaped dilatation which, following the course of the naso-frontal duct, extended upwards and outwards until it merged in the frontal sinus. Its lining membrane looked thin and injected, and a curved probe could be readily passed into the sinus beyond the site of the supra-orbital notch.

Opening into the cyst gave rise to no disturbance, and no suppuration was seen at the time or later. When examined eight months afterwards the fullness at the inner side of the eye was less, but noticeable, and the opening from the nose into the cavity had diminished little in size.

Ocular Report.

Vision: R. $\frac{20}{20}$ C. + 1 D. sph. C. + 3 D. cyl. $\downarrow$ = $\frac{5}{60}$.
L. $\frac{5}{60}$ C. + 3 D. sph. = $\frac{5}{60}$.

The fact that in this case no particular attention had been drawn to the eye until four years after the first symptoms is a proof of the slow and insidious way in which these cysts develop. The advent of epiphora indicates extension of the pressure to the lacrymal apparatus. The patient stated that the prominence of the eye when seen by me was less than two months before.

This alteration has been probably due to capillary leakage from the cyst, the contents of which did not escape at the same high pressure as in the first case recorded. The possibility of the mucocoele having formed in the anterior ethmoidal cells, and expanded upwards between the floor of the frontal sinus and the roof of the orbit, was considered.

Apart from probing, a fair view of the cavity was obtained as far as the point where it turned outwards, and I concluded that it was continuous with the frontal sinus. The contents of the sinus, in seeking exit by a process of gradual distension, appeared to follow an anatomical route similar to that adopted by Killian, in order to secure free drainage in his radical operation for frontal sinusitis.

THE following bills are now before the New York State Legislature: One, drawn up by a joint commission of the State Bar Association and the State Medical Society, regulating expert medical testimony, which failed to pass last year; two bills providing for the further restriction of cocaine and other "habit-making" drugs; one prohibiting the practice of medicine, dentistry, or pharmacy by a corporation; and one forbidding advertisements in the public press relating to the treatment of venereal or sexual diseases.