same time numbness of the left arm was noticed, with some impairment of motion. This latter condition continued and increased until the arm was almost entirely helpless. The right arm and both legs also became involved, never in as marked a degree as the left arm, but enough to make motion unassisted in bed, impossible. At one time there was some difficulty in swallowing, and for some time the breathing was almost entirely diaphragmatic.

The patient's condition remained about the same for two months, after which there was a slow but steady improvement, so that at the end of the third month she was able to sit up for a short time each day, and in December, five months from the onset of the trouble, she was able to move about with but little assistance, and was taken home. The paralytic symptoms referred to the right arm and the legs had by this time practically disappeared, but the left arm was still very helpless. The swelling in the neck was practically the same as when first noticed.

The patient was not again seen until thirteen months later, during which time, aside from the Thomas collar no special treatment had been carried out. At the time of this examination the improvement in the patient's general condition was most marked. She moved about with perfect ease; and, aside from the stiffness of the neck and some impairment in the use of the left arm, she seemed well. Extension of the neck was entirely restricted, so that in order to raise the chin the whole body was bent backward. Rotation was also entirely restricted, while flexion of the neck was nearly normal, it being possible to lower the chin to the chest. On each side of the neck, over the transverse processes, was very distinct thickening, apparently bony in character.

In the left arm all motions were limited, especially those in which the shoulder muscles were used. The fingers were flexed, apparently due to contraction of the palmar fascia and the flexor tendons. The sensation of the arm and hand was normal.

At the present time the patient's condition is practically the same as at the time of this last note. She is able to be about at her work, but there has been no change in the condition of the neck or the arm.

In commenting upon such a case the chief interest lies in the diagnosis. Certain conditions can be eliminated at once or in a short time while with others positive differentiation is difficult or impossible. The fact that other joints are not involved, together with the effect of the salicylates, makes it easy to rule out acute rheumatism, while the history of the onset, this condition developing so rapidly, makes the chronic rheumatism improbable. The simple "crick" is rarely so severe and is well in a few days. Caries of the cervical spine developing after middle life is very rare; so that, while this may not be put aside entirely, it is improbable. The chief difficulty lies in differentiating osteo-arthritis from malignant disease; and this at times is impossible until after the lapse of considerable time. In the present case the positive diagnosis was not made until the improvement commenced. The history of the onset, if this can be depended upon, is at least suggestive; but the character of the pain is probably of as much importance as any one symptom. In malignant disease the pain is, as a rule, much more severe and more constant than in the bone inflammations, and fixation or drugs (aside from morphia) have no effect upon it.

The treatment of osteo-arthritis of the spine is largely palliative. Absolute quiet for the affected part is of first importance and for this purpose splints, bandages and various forms of apparatus are of use. In certain portions of the body extension can be employed to advantage to control the muscular spasm. Local heat is also of benefit. Drugs, aside from making the patient more comfortable, are of little use.

CLINICAL NOTES OF CATARACT PATIENTS.

BY DAVID COGGIN, M.D., SALEM, MASS.

DISLOCATION DOWNWARDS OF A CATARACTOUS LENS WITH NORMAL VISION.

Mr. W., forty, accountant, February 16, 1877. Was sent from a life insurance office because of poor vision of his left eye ($\frac{1}{10}$ and $\frac{1}{4}$, right). Incipient cataract, left, with fluid vitreous and floating opacities.

April, 1888. Mature cataract, left. With a cylindrical glass from an optician, vision = $\frac{2}{3}$, right eye. Cataract forming.

Christmas, 1889. Last evening suddenly observed "stars," and saw surrounding objects with his blind (left) eye. The opaque lens was found to be dislocated downwards, rising and falling with the movements of the eye. No pain or redness.

Later he sought his optician, who gave him a lens with which, one month ago, his vision was normal, or $\frac{5}{8}$. The upper edge of the cataract could be seen behind the lower border of the pupil. No pain or discomfort was complained of. The cataract of his right eye had so far advanced that he could count fingers only, half a metre off.

RUPTURE OF A PUPILLARY MEMBRANE AFTER REMOVING A CATARACT.

Miss S., sixty, April 1, 1877. Extraction of cataract from her left eye (Graefe modified). Healing process normal. Discharged from the Salem Hospital May 2d with a delicate membrane which prevented clear vision. Six weeks later, on examining the eye previous to performing a double-needle operation, it was found that a spontaneous rupture of the membrane had occurred, so it was necessary only to order the glass with which she could see well.

HEMORRHAGE AFTER EXTRACTION OF A CATARACT.

Mr. M., sixty-seven, master mechanic, September 9, 1880. Left eye lost, owing to an accident four years before. Mature cataract of the right. Patient timid, and insisted on inhaling ether, under the influence of which he came slowly and with considerable excitement. Lens apparently adherent inferiorly, so it was extracted with a scoop. Loss of a moderate amount of fluid vitreous. Scarcely any hemorrhage had accompanied the iridectomy. Half an hour later the eye looked well, the patient had about recovered consciousness, and the knit bandage was applied. On visiting him in the evening the dressings were found saturated with blood. He had vomited, or retched, most of the afternoon. The lips of the wound were separated by a firm clot of blood which was removed and the band was reapplied.

But little pain was complained of during the healing process. There was a good anterior chamber, a closed pupil, perception of light and no atrophy of the eyeball. No attempt was made later to improve the

man's vision (which, very likely, would have been unsuccessful), as he became insane and died shortly afterwards.

SPONTANEOUS EXPULSION OF CATARACTS, LOSS OF VITREOUS; GOOD VISUAL RESULTS.

W. H. P., forty-nine, master machinist, February 28, 1884. Cataract, right eye, six years. No ether. Section above. Patient steady. After lacerating the capsule the lens was suddenly extruded and with it a considerable amount of fluid vitreous, after which some normal vitreous protruded, which was excised. Healing process retarded, but the final result was good—vision being $\frac{4}{5}$ of normal.

January 18, 1888. Having seen to make a cart with his right eye, he wished to have his left one operated upon. Cocaine and pilocarpine anesthesia. Incision superiorly, with a small iridectomy as previously. Remembering how violently the cataract had escaped from the right eye, precautions were taken this time to prevent a recurrence of the same casualty. After making the iridectomy and incising the capsule and while reaching for a bit of linen, the lens was abruptly ejected (as from a catapult) landing on the lower lid. Vitreous gushed from the gaping corneal incision. Vision was $\frac{1}{8}$ on the 6th of February, when he was sent home.

MORSEL OF HORNBLLENDE IN THE LENS, SIMULATING STEEL.

G. T., thirty-one, foreman of quarry, December 12, 1892. While overseeing a workman, standing two feet away, he felt something strike his right eye, which was followed by a trickling of water. When seen by me a few hours later, there was a perforating wound of the cornea at the equator, on the nasal border of the pupil, through which iris tissue protruded. No blood to speak of within the eye. Lens becoming cloudy. On its surface there was the appearance of a particle of steel about two millimetres in diameter. It made no advance towards Dr. Bradford's magnet, however. Atropine was ordered, a flannel bandage applied, and the patient went home.

December 17th. Had no pain. Corneal wound closed. Prolapsed iris had disappeared within the anterior chamber. Cataractous lens beginning to dissolve, showing more clearly the foreign body.

December 27th. Had pain but once. Pupil regularly dilated. Lens quite opaque, apparently. Cocaine and sublimate. Linear incision with keratome. The foreign body (extracted with forceps) proved to be a particle of syenite about four millimetres in length, on the presenting end of which was the bit of hornblende that so resembled a fragment of steel! Only a thin layer of the front of the lens had become opaque so the patient was again sent home.

February 9th. With Teele's suction tube, removed the balance of the cataract.

Later, with a lens, his vision was $\frac{5}{8}$, being better than that of the left eye owing to the presence of an old cicatrix on the cornea of the latter. The right pupil was round and the point of entrance of the bit of stone could barely be recognized.

COLLAPSE OF CORNEA AFTER AN EXTRACTION.

E. S., seventy-six, book-keeper, October 15, 1894. Left eye lost twenty-five years ago after a cataract extraction. Vision of right, $\frac{1}{12}$. Lens becoming opaque.

February 2, 1895. Small iridectomy upward, preliminary to an extraction (and Förster's procedure).

March 9th. Removed the cataract. As it escaped through the incision, the very tenuous cornea collapsed, rising and falling as the patient breathed, or so it seemed. As on two or three previous occasions the thinned cornea had become sunken and wrinkled in the same manner at the time of the operation, and as the visual result was ultimately good, this eye was bandaged with hope. It was examined five days later, and found to present a normal appearance so far as the healing process was concerned. Subsequently, with his temporary glasses, his vision was $\frac{1}{2}$ of normal and he read the smallest Snellen type (0.5).

The experience of Dr. Derby in removing cataracts from the eyes of extremely old patients (see JOURNAL, September 26th) is most interesting. My own is more limited and mainly with younger people, though it accords with his.

In over a score in whom the age varied from seventy-five to eighty-eight, each one had useful vision.

In this connection it may not seem irrelevant to say a word in favor of home treatment when it is practicable. Most of these old patients lived within a radius of fifteen miles, thus they were able to undergo treatment in the midst of a familiar environment. Surrounded by members of the family circle, the days of confinement must have seemed less irksome and a favorable result was more likely to follow than if they had been treated at a distance from home and attended by strangers for two or three weeks. The case of an old lady of eighty, at the Salem Hospital a few years ago, who was found beneath her bed groping for something two hours after having had a cataract removed, is an illustration of this. She was sent to her home a fortnight later with good vision, however.

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., BOSTON.

SUB-CONJUNCTIVAL INJECTIONS.

MARTI,¹ in a dissertation upon sub-conjunctival injections, begins with a review of all the writings on the subject since the year 1866, when Rothmund, of Munich, recommended subcutaneous injections of common salt as a means of promoting the clearing of corneal opacities. In the clinic of Professor Schiess of Basle, the use of sublimate injections was begun in 1892, and gave, especially in the cases of hypopyon keratitis, satisfactory results, but was attended with much pain, and the production of inflammatory adhesions of the conjunctiva to the sclera in the region of the injection. Mellinger found, on experimenting with rabbits, that if the sublimate solutions were reduced to a strength of 1 to 4,000, no such results occurred. He, therefore, adopted the latter strength in treating the human eye.

The success obtained with this extremely dilute sublimate solution suggested the probability that it was rather the fluid than the disinfectant that was the efficient agent. Experiments in which a normal solution of common salt was substituted for the sublimate solution appeared to confirm this idea. Stronger solutions up to four per cent. appeared to answer still better.

¹ Inaugural Dissertation, Basle, 1894; Ophthalmic Review, July, 1895.