of the polar ice; diphtheria now began to spread to the northern and western parts of the country.

The winter of 1859 was extremely severe, with a drift of polar ice to the north, east, and west parts of the island; hard freezing, even during the spring, so that sea-water in some firths of the west part of the island froze to a depth of more than fifty feet. Typhus now began to spread over the whole country, accompanied by typhoid fever and dysentery.

The winter of 1860 was mild, but the spring extremely cold, with tremendous ice-drift to the north part, occasioning great loss of sheep and cattle, and consequent scarcity of food. Typhus and typhoid fever raged with tremendous severity throughout the whole country.

The winter of 1861 was mild, the spring warm, and the summer season unusually mild and fine. Many sporadic cases of diphtheria occurred, and severe rheumatic affections and fevers were common.

The winter of 1862 was rather cold and stormy; the spring and the summer exceedingly cold and dry. About the 13th of May a very common and malignant influenza broke out in Reykjavik, and spread during the following two months over the whole country. It was one of the most dangerous and malignant epidemic catarrhs that ever visited the island, augmenting the mean death-rate in the whole island by nearly 2 per cent.

The winter and spring of 1863 were cold, and the summer cold and rainy. Epidemic pneumonia was very common over the whole island, and occasioned in many places a great mortality amongst the inhabitants, where no medical aid could be obtained.

The winter of 1864 was very stormy and rainy, but the spring and summer were warmer than usual.

It is stated by Dr. Schleisner that the great mortality amongst the inhabitants of Iceland is founded on two principal causes—viz.: 1st, on the great mortality of infants in the first year; and 2nd, on the epidemics, which, on account of the want of medical aid, become more dangerous here than in any other part of Europe.

The mortality of infants in the first year has, according to the general registers, often been enormously high; and thus we find in the quinquennium of 1851–1855 the death-rate of this class to be no less than 40 per cent., and in the quinquennium of 1856–60 39 per cent.; but, taken on the whole in the last decennium, the death-rate during the first year is equal to nearly 33 per cent., or about 8 per cent. more than the mean death-rate of this age is found to be in England and most other countries of Europe, where the average mortality of infants during the first year is calculated to be 24 to 25 per cent. For the town of Reykjavik the mortality of infants has been very low, little more than 19 per cent., and had this low rate prevailed in the whole country during the ten years referred to, 15 or 16 per cent. of infant life would have been spared every year. The death-rate of children from the first to the fifteenth year has, for the whole country, been 11·91, or one-half of all the deaths in this period. For Reykjavik it has been far more favourable, or about two-fifths of all the deaths.

The greatest destruction of infant life in Reykjavik during this period was occasioned by diphtheria. This disease prevailed extensively during the years 1856, '57, and '58, when the mortality of children from this cause rose to 4 per cent. The greatest mortality for the whole island was in the year 1860, when it was found to have been 5 per cent. of the whole population; for Reykjavik it was far less—viz., 3·50 per cent. In the year 1862 the mortality for the whole island was 4·30 per cent.; for Reykjavik 2·80 per cent. In former epidemics of this kind, however, the statistics were not so favourable for the town, for in the year 1834 the mortality from influenza, both for Reykjavik and the whole country, was about 5 per cent. of the entire population; and in the year 1843, when an epidemic of the same kind made great ravages, the deaths were found to have been about 5 per cent. as well for the town of Reykjavik as for the whole country. I cannot, therefore, help thinking that my treatment of the recent epidemic of influenza (described in a late number of the *Edinburgh Medical Journal*) has been very successful; and it seems to me, that I might claim the same success for the treatment of the last typhus epidemic, as the mortality was far less—nearly 2 per cent. lower—than for the whole country. It might certainly be supposed that our little town was far more favourable for longevity than the country; but this cannot be demonstrated. On the contrary, we find the town of Reykjavik more unhealthy than the country, not only on account of its low situation at the sea shore, but because of the position of the surrounding hills and the existence of a lake at the south

side of the town filled with stagnant, muddy water, which very often gives rise to unhealthy exhalations. Besides this, the majority of the population consists of fishing people, who live in small, badly ventilated, and often not very clean, huts, who use very little milk or meat diet, which is abundant in the country, but live on all sorts of fish, both salted and dried, without due proportion of vegetables and condiments. Some of these people are also inclined to over-indulgence in strong liquors, so that delirium and other maladies resulting from intemperance are of not unfrequent occurrence.

While investigating the mean death-rate in the different parishes of Iceland, I found out a parish unusually favourable for longevity: this is the parish of *Þingvall*, where the old Diet assembled for nearly ten hundred years. This parish is very small, and has about 130 or 140 inhabitants; and out of this population only 12 deaths have occurred during the last decennium, half of whom were more than sixty years old, and a third nearly ninety years old. The geological features of this parish are very interesting, the whole parish being situated on a great lava current, which one time flowed from the large but now extinct volcano, "*Skjaldbreið*." This lava stream is now all overgrown with small birch trees, and has the clearest and purest drinking water I ever saw in my life. The elevation of the lava stream above the sea level is very considerable, I should think about 800 feet. There are no bogs to be found in the whole parish; it is therefore free from all bad exhalations. I am about to visit this place, in order to find out from the parish books the mean death-rate of the population as far back as possible.

Reykjavik, July 3rd, 1865.

ON A

NEW MODE OF ARRESTING HÆMORRHAGE BY TEMPORARY COMPRESSION.

By FREDERICK CHURCHILL, Esq.

THE very rapid success which has attended the introduction of acupressure as a hæmostatic agent in surgical operations, and its speedy adoption by many of our most distinguished surgeons, is sufficient proof that the ligature, though employed with such success for a number of years, is not the best mode of arresting arterial hæmorrhage. Still the very fact that the advocates of acupressure have hitherto failed to produce a single valid argument to prove the advantages of acupressure over those of the ligature, except as a temporary compressor of the bleeding point, is sufficient to induce us to give further consideration to the claims of the latter. With this view I began to consider how we might combine the advantages of each, avoiding all the disadvantages, or, in other words, to secure the artery against the risks of secondary hæmorrhage by a ligature removable at will. The result of my investigation is the knot I am about to describe. Take two ligatures of the ordinary length, and tie upon them a reef-knot. This may be either prepared beforehand, and kept slack, so as to be slipped over the head of the forceps when the artery is seized, or, with the help of an assistant, it may be easily tied at the time of the operation. The form of knot may be better understood by referring to Fig. 1. In the centre of it is a transverse section of the gutta-percha tube described below. When the knot is made fast, cut close either A and B or C and D, the remaining ends being arranged on each side of the flap (*vide* Fig. 2). Where several ligatures are employed, it is advisable to tie the corresponding ends over the face of the stump. When the artery is occluded, which, I believe, will prove to be in a much shorter time than with acupressure, a gentle and equable pull of the corresponding ends in a straight line will untie the knot. The fact that the middle coats when divided will retract, renders it certain that the risks of secondary hæmorrhage are less than when the needle is used, and, consequently, an earlier removal of the ligature can be effected with safety.

Should the objection be raised that "in sponging the flap you may untie the knot,"—I have found by experiment that it holds as firm as the old ligature, except when counter-traction is made upon the corresponding cords, which never would be the case when sponging; or that "in removing the knot you disturb the artery,"—I maintain, on the contrary, that the removal of the knot *may* tend to occlude the artery more effec-

tually, by twisting it upon itself, and cause the formation of an external clot within the sheath to support the internal coagulum. In order to test the resisting power of the knot to the current of blood in the artery, I made a number of experiments which prove that the single reef is quite sufficient to hold any artery. For instance, I took a piece of thick elastic tubing about three inches long, to one end of which I fastened my knot, and into the other end I inserted the nozzle of a very powerful syringe, the piston-rod being an inch in diameter. I then handed it to a sceptical friend, who injected water into the tube, but with all his force he failed to dilate the knot. This he acknowledged quite convinced him. Still, in order to combat, if possible, all the objections that may be raised, I experimented with the double reef—i.e., a reef-knot on either side of the artery, which has of course double the strength of the old ligature; and I removed this also with comparative ease, though not quite so readily as the single reef.

I am therefore sanguine that, should my future experiments on living animals confirm those I have already made, my plan will become generally adopted. With these few remarks, I beg to leave the suggestion in the hands of the profession, who I have no doubt will give it an unbiased reception, if it prove worthy of recognition at all.

Oct. 1865.

A Mirror OF THE PRACTICE OF MEDICINE AND SURGERY IN THE HOSPITALS OF LONDON.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proæmium.

ST. MARY'S HOSPITAL. (OPHTHALMIC DEPARTMENT.)

CASES ILLUSTRATING THE VARIOUS OPERATIONS
APPLICABLE FOR THE CURE OF CATARACT.

(Under the care of Mr. ERNEST HART.)

MR. HART has recently had under treatment at the above hospital a series of cases of cataract, which were interesting in that by their variety they afforded ground for separate consideration, and were treated, according to the principles which Mr. Hart now lays down in his lectures, not by one uniform

method, but by different procedures, varied according to what are conceived to be the exigent characters of the respective cases.

The first of the series was a female patient, aged fifty, the wife of a respectable man, but herself a hard drinker. She was a very unfavourable subject, loaded with fat, with red and inflamed face, liable to fainting fits, having fatty heart, and also subject to severe angina. She could seldom rest lying down in bed, and was prone to erysipelas. She ate little solid food, but craved for stimulants. Extraction by the ordinary method twelve months since, attempted on the left eye, had ended in suppuration of the corneal flap, and had failed to restore sight.

In this case, Mr. Hart, in operating on the right eye, chose the operation of linear extraction, with iridectomy, but divided it into two periods. He performed first an upper iridectomy, and three weeks afterwards he extracted the lens by a *linear* operation. He stated that he believed that in this way the risks of the operation of extraction are reduced to a minimum. The preliminary iridectomy, in a case where cataract already exists, is devoid of any serious danger. It has the great advantage of diminishing tension of the eyeball, or subsequent tendency to cyclitis; and by removing the risk of bruising the iris in extracting the cataract, does away with a source of accident. By stopping at this point, and not proceeding at once to extract the cataract, all complication is avoided. The vitreous humour cannot escape, and the traumatic injury to the eye is so slight that very little reaction follows. In the same way when, three weeks afterwards, the cataract is extracted by linear incision, that operation is thus reduced to its simplest elements, and the chances of failure are materially lessened by eliminating causes of accident. Mr. Hart attributes many of the most serious accidents that in bad cases follow the performance of the flap operation—which in good cases is so brilliantly successful—to the free section of the cornea necessary for the removal of the lens, and the destruction of the natural tension of the eyeball. It is under this provocation that intraocular hæmorrhage is apt to follow in the case of diabetic cataract, or where cataract is coincident with extensive atheroma; and general suppuration of the eyeball, when it occurs, may be considered to be possibly due to the hæmospasy following this sudden and complete removal of all the natural tension. In the linear section this is by far less considerable, and the displacement of the incised edges being less, a union within twenty-four hours by first intention may frequently be obtained.

In extracting by this method Mr. Hart uses the following instruments: a wire lid-speculum, to which he has added a circular rack, so as to regulate the extent of dilatation, and to prevent the spasm of the lids from affecting the eyeball (see *THE LANCET*, vol. i. 1864, p. 632); a pair of fine straight iris forceps and angular scissors. He fixes the eyeball himself with broad-pointed forceps, guarded so as not to crush the conjunctiva. The operation of iridectomy may be thus performed without the intervention of any assistant except to excise the iris, under direction, when drawn out. The subsequent extraction may be performed wholly without assistance. For this Mr. Hart uses a broad, sharp lanceolar knife, a capsular needle, and a modification of Schüff's spoon, either his own or Mr. Critchett's vectis spoon.

The patient in this case did perfectly well, and Mr. Hart referred to two others during the year—one of diabetes mellitus in the hospital ward, and another, a private case from Dr. Allan, where the patient was in advanced years, in very feeble health, the subject of weekly attacks of gout and constant vomiting,—where the same method had been successful. These three were all cases calculated to test very severely the applicability of any proceeding, and especially the last. Age and debility are not very encouraging, periodic gout is highly disadvantageous, and a habit of frequent vomiting almost a fatal counter-indication for a flap operation. The three together constituted as formidable a complication as could be encountered. The operation, moreover, was the more fully tested that all the difficulties had to be actually endured by the patient. She vomited constantly after the operation. She was taken with gout, and had gouty inflammation of the eye on the third day, and could with difficulty be nourished. Under all these disadvantages the eye did well, and the patient can see. In the case of Mrs. M——, just referred to, the result has been a perfect success.

In the other cases of the series, Mr. Hart indicated in like manner the clinical peculiarities which had guided him in operating, and we shall complete the record subsequently.