in cremation, I undertook the task of going over the literature which has accumulated upon this subject and have tried to find out from a bacteriological point of view what arguments could be advanced in favor of cremation. The conclusions reached are not at all in accord with my preconceived ideas, and it appears as though it belonged to the chemists and not to the bacteriologists to prove, if possible, that cremation is a hygienic necessity. Of course economical and æsthetic arguments are entirely uninfluenced by the lack of evidence to support any given hygienic argument.

Clinical Department.

DIPHTHERIA: TRACHEOTOMY, PERSISTENT AND INCREASING DYSPNŒA, SYSTEMATIC CURETTING OF THE TRACHEA; RECOVERY.

BY CHARLES L. SCUDDER, M.D.,
Assistant in Clinical Surgery, Harvard Medical School, Boston.

A BOY, four years old, ordinarily in good health, had been ill with diphtheria for two days. His brother, one year younger, had died of the same disease one week previously. He was referred to me by Dr. T. M. Rotch, of Boston.

Very little disturbance of the tonsils and pharynx existed at the time of the first examination, the end of the second day's illness. The breathing was slightly difficult. The *alæ nasi* dilated a very little, the retraction of the supra-clavicular and epigastric regions with each inspiratory movement was just beginning to be apparent. In short, breathing was slightly embarrassed. The lungs were normal. The heart was in good condition. The temperature was low. The indication *par excellence* for operating was present, namely, increasing difficulty in breathing.

Tracheotomy was done. The relief, of course, was instantaneous. The boy was kept in a cot-bed covered by a hood of sheets, which was constantly filled with steam from two boilers.

All went well until the second day after the operation, when the secretion from the tube became a little sticky and slightly diminished in amount. The character of the secretion improved upon the use of a spray close to the tube, and the boy had a comfortable night. The third night, however, there was serious trouble. The secretion became very slight, the respiration rapid and labored, and the child cyanosed and extremely tired by the tugging for air.

In spite of the removal and cleansing of the inner tube and the removal, cleansing and replacing of the outer tube; the removal of both tubes and the dilatation of the wound; the use of the catheter through the wound, and the introduction of a feather, and later a pair of properly-curved forceps, — notwithstanding all of these ordinary manœuvres for the relief of obstruction below the tracheotomy wound, no relief was afforded. The child was fast losing strength, and was becoming rapidly asphyxiated. It then seemed necessary to resort to a very radical procedure. Having at hand a dull wire intra-uterine curette, this was introduced into the wound, gently carried to the bifurcation of the trachea, and all sides of the trachea — its whole circumference — systematically and thoroughly curetted. As the curetting continued, pieces of membrane, one of which made a complete cast of the circumference of the trachea, were withdrawn through

the wound. The hæmorrhage was slight. The relief to the dyspnœa was immediate.

The tube was replaced; and the boy made an uninterrupted recovery. One or two pieces of membrane came away the following day.

Two years have elapsed since the tracheotomy and curetting of the trachea. The boy is well and strong.

This case is recorded to emphasize the importance of systematic curetting of the trachea for obstruction by diphtheritic exudation. The manœuvre was suggested in a conversation with Dr. Wheeler, of Chelsea, Mass., regarding a case which he had likewise curetted. A careful search of medical literature fails to find a similar case recorded.

In the case in hand the diphtheritic inflammation was probably quiescent. The product of that inflammation was separating from the walls of the trachea. Resolution had begun. It was an opportune time to curette.

No general rule can be deduced from a single instance, but it would seem wise to resort to thorough curetting, if, after tracheotomy, dyspnœa increased in spite of all the ordinary procedures, and if the patient is in good general condition.

Intubation would have been of little aid in this instance.

It has been my experience that these cases operated on early in the course of the disease and when the laryngeal symptoms are slight, even though progressive, do better than the cases operated on when the child is exhausted by difficult breathing and by sepsis.

HINC ILLÆ LACHRYMÆ.

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

TEAR-PASSAGES that are by no means thoroughfares are, as is well known, frequently encountered in our latitude and especially during cold weather. It is likely that more females than males seek advice because of this trouble — whose victims range from infancy to age.

When seen early, the epiphora ordinarily yields to treatment, as by dropping a lotion within the conjunctival sac (such as acid zinci sulph. 0.10, acid boric. 0.50, aqua menth. p. 10.0, aqua camph. 20.0).

Naturally, if the sac is distended, its contents should be squeezed out before using the lotion. Large shade glasses worn out of doors afford relief in some instances.

Rarely the catarrhal trouble is located at the inferior extremity of the nasal duct, and it may subside on applying within the naris a solution of Seiler's tablets, or the like.

Frequently the lower punctum is so small as to be barely visible. In such a case, and also when it is somewhat everted, it is often sufficient to dilate it, as well as the canaliculus, with a small conical probe, and then to inject an astringent lotion with a Meyer's syringe (which has a bulbous tip and is therefore less liable to injure the mucous membrane than is Anel's).

If the fluid passes through the corresponding nostril it is most reassuring to the patient. The country practitioner, who is frequently forced to extemporize apparatus, can make blunt the points of a large darning-needle and of a hypodermic syringe and he will thus have instruments that will be of material aid in treating this trouble.

Even if the nasal duct is closed so that no water passes down into the nose, the frequent use of the syringe is ultimately likely to be of benefit.

But in cases of long standing it is ordinarily necessary to incise (somewhat inwards towards the eye) the outer third of the lower canaliculus, and to make two or three vertical cuts through the narrowed portions of the nasal duct with a probe-pointed knife, which has a long, malleable shank, such as Agnew's. Afterwards, the passing of probes is the routine, but by no means always satisfactory, course of treatment.

Some ophthalmic surgeons prefer large probes — three millimetres to four millimetres in diameter.

My usual practice is to use a Bowman 5-6 (having William's olive tip), and bent to form an arc. I pass the probe and immediately withdraw it, in accordance with the advice once given at Moorfields by the late Sir Wm. Bowman, Bart. Cases occasionally occur where a member of the patient's family learns to pass a probe most deftly. Assuredly, the frequent emptying of the sac by pressure and the use of an eye-water are to be preferred alone rather than in connection with harsh probing by whomsoever done.

In acute inflammation of the lachrymal sac (abscess of the tear-passage), on using cocaine and introducing an Anel's probe through the lower canal into the sac, it is often possible by an in-and-out motion, in conjunction with gentle pressure on the distended sac, to evacuate so much pus as to relieve the tension and pain. On applying moist heat for ten minutes every hour, and on repeating the emptying of the sac two or three times, resolution may occur.

Several timid patients have been thus relieved — the last one quite recently. One was a man who declined to have the abscess punctured, and on three occasions, at intervals of, perhaps, as many years, a probable perforation through the skin with a resulting disagreeable fistula of the lachrymal sac was apparently avoided by performing this little manoeuvre.

In chronic dacryocystitis with great distension of the sac-cavity, so an unsightly tumor was a cause of annoyance to the patient, after opening and appropriately treating the passage to the nose, ordinary contractile collodium (U. S. P.) was painted on the external surface of the tumor, renewing it every day or two, till the swelling had quite disappeared and the capacity of the sac had been restored to its former limits, while the epiphora was no longer present.

It has never been my fortune to either apply caustics to cause obliteration of the sac, or to excise it.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURKELL, M.D., AND H. W. CUSHING, M.D.

LOCAL ANÆSTHESIA.

VON HACKER¹ has published his results relating to the use of cocaine and æthyl-chloride for purposes of local anæsthesia. The preparation of cocaine found most satisfactory was:

R Cocaine	0.1
Sodii Chloride	2.00
Aqua	100.00

Of this solution 10 grammes, the amount usually used,

¹ Wien. Klin. Woch., 1893, vi, 10.

contains 0.01 gramme of cocaine. The solution should be injected into and under the skin so as to create an œdematous-like condition. Distinct wheals are formed. When so used, von Hacker found that minor surgical operations were absolutely without pain. The method is not suitable for extended operations. The chloride of æthyl spray was also found to be quite efficient for small operations and quite simple in application.

SURGICAL SIGNIFICANCE OF DUST.

The interesting editorial of Warbosse,² in which he describes at length the important work of Hægler,³ deserves a careful perusal. The article is too long to report in detail. The results reported have an important relation to operative work and wound treatment. The work seems to show that the important factor in atmospheric infection is dust; that this contains the germs; that air in a room unagitated contains few germs; that the atmosphere of an unclean room in a state of rest is freer from germs than that of a comparatively clean room in a state of commotion. Dry dressing and dry treatment of wounds allow a greater distribution of germs into the atmosphere than moist ones. It is true that the danger of infection from air containing pathogenic microbes is much less than from other sources. Still, it is of enough importance to be considered when one is striving for complete asepsis. Hence attention should be paid to diminishing or eliminating the harmful effects of dust. Also to prevent the conversion of infectious material into dust, as by the dessication of pus, agitation of dry discarded dressings, or in similar ways. The methods proposed for the removal as far as possible of this liability of infection during operative work or the dressing of wounds were to avoid agitation of the air at such times or to precipitate all dust by charging the atmosphere with moisture, so that during its precipitation the dust is carried down with it and the air is thus cleared as during a shower. The moist surface thus produced holds such precipitated dust fast for a time, and prevents its renewed circulation by air currents. The article is an important one, and is a valuable contribution to the knowledge of asepsis.

SALINE INFUSION.

The value of this method of treatment of severe surgical shock as well as for cases of severe hæmorrhage, with or without strychnia, is emphasized by Dr. Sternberger,⁴ who reports two severe cases of collapse, which were apparently rescued by the infusion. Three pints were syphoned into the median cephalic vein. In one case the infusion was repeated at the end of fifteen hours. The six-tenths-per-cent. solution was used at a temperature of 117° and 118° F. Dr. Sternberger considers the high temperature of the infusion and the after-use of strychnia important factors to his success; also the amount of infusion (three pints).

The saline solution can also be used subcutaneously for the same purpose, or by enema. The former method has recently been described by Dr. Farrar Cobb.⁵ The apparatus used was a metal aspirator trocar with stop-cock and side entrance connected by rubber tube with a glass or hard rubber funnel. The trocar is sterilized by heat, the tube or funnel with

² Annals of Surgery, 1893, vol. xvii, 404.

³ Beiträge z. Klin. Chir., Bd. ix, Heft. 3.

⁴ New York Medical Record, 1893, vol. xliii, p. 5.

⁵ Boston Medical and Surgical Journal, 1893, vol. cxxix, 325.