suite of baths, and the work begun forthwith. Thus was inaugurated a movement which must prove a revolution in English thermal treatment, and, when completed, place Bath in the very first rank of thermal spas in Europe. Part of the new suite is now in use, and the whole building has so nearly reached completion, that a very fair idea can be formed of the entire plan. It is no exaggeration to say that these baths will surpass in magnificence anything formerly attempted, either in this country or on the Continent, while nothing that science and experience can suggest will be neglected to bring them to the highest point of utility.

The *private deep baths* contain from 800 to 900 gallons of water; they are T-shaped and lined throughout with porcelain tiles. The approach in all is by a flight of steps, with brass side rods, and special arrangements are made by means of an armchair swung to a crane by which cripples can be lowered into and removed from the bath without trouble or movement. Each bath is provided with a powerful douche, through which the water can be applied with great force to any part of the body while the bather is submerged in the water. I am not aware that this form of underwater douching is practised at any other spa, but it is found very efficacious in certain cases. Attached to each bath is a large and comfortable dressing-room, provided with all the requirements of the toilet. Here the bather undresses, and on his return from the bath the attendant "picks" him in piping-hot sheets and towels, and wraps him in a blanket spread for the purpose on a couch. After ten or twenty minutes' rest the attendant returns, and having thoroughly rubbed the patient down assists him to dress.

Reclining baths can be had at the different establishments if preferred. These, when filled, contain 150 gallons of water, and have all the convenience of dressing-rooms, etc., the same as the larger baths.

I find it impossible in the time to describe the whole of the bathing accommodation, so shall proceed at once to a short description of the most recent improvements. Chief among these are:

I. *The Massage Douche Baths on the Aix-les-Bains System.*—The rooms set apart for this purpose are very grand, comprising in each suite a douche room and two dressing-rooms. The douche rooms are 13 ft. 9 in. by 10 ft. 6 in. with domed roof 20 ft. high. The floors are artistically laid in ceramic tessera, the walls throughout being tiled in pretty designs. The dressing-rooms, which have the same height of roof, are decorated in the same style, and present a beautifully cool clean appearance. Arranged round the bath-rooms are douches, sprays, and showers of every variety and form. When in use the floor of the bath is covered to the depth of two or three inches with hot water. The bather, having undressed, enters the bath room, when the attendants, one in front and one behind, play powerful douches over the body, at the same time moving the joints one after the other to their utmost extent, firmly kneading and shampooing the different parts, and conducting a general system of massage, the parts most affected receiving the greatest attention. With the knowledge gained by experience, the attendants determine how far this process can be carried without causing pain or doing harm. A tepid shower and douche, gradually cooled down until a bracing effect is obtained, and the patient leaves the douche room and enters the dressing-room, where he is packed in the manner already described. In the case of very delicate patients it is better that they should be spared the fatigue of dressing after the bath, and for such arrangements are made to have a suit of underflannels, dressing-gown, etc., heated in the hot press, when by means of a bath or sedan chair they can be conveyed home, and put to bed for an hour or two to rest.

II. *Local Vapour Bath.*—By means of an ingenious contrivance any part of the body, an arm, leg, or even a single joint, can be subjected to the influence of the thermal water in the form of a natural steam. The part operated on soon begins to perspire freely, and becomes soft and pliable. If it is so ordered, douching and massage follow, and thus a very powerful local effect is produced. This form of bath is very useful in all cases of stiffening and enlargement of joints due to any cause, and is also a very soothing treatment for acute gout, relieving the sufferer from much pain, and shortening the duration of the attack.

III. *Steam Bath.*—For this bath, ordinary steam is mixed with the thermal vapour, to raise the temperature to the desired point. Dr. Grainger Stewart graphically describes this form of bath, in the following terms: "The patient enters an apartment which contains a curious wooden box with a round hole in its movable lid. After

undressing, he steps into the box, and finds that he is shut in all except the head, the round hole being occupied by his neck. Immediately a valve on the level of the floor is opened, the hot vapour rises about him, and he soon begins to perspire freely. The perspiration running from his brow, trickles down his face. Presently he feels the stream flowing down his sides and legs, and very speedily a feeling of oppression and debility comes on; and after ten or twenty minutes the bath is opened up." This bath may be followed by douching and massage as formerly described, when the effect is very decided, but only strong patients can stand the two combined.

IV. *Circular Spray, or Douche en Cercle.*—Composed of tiers of pipes forming two-thirds of a circle, perforated with minute holes, and emitting very fine jets of water. The temperature of the spray being under perfect control, alternating shocks of hot and cold water can be given, which have a very stimulating effect on the nervous system.

A proposal has been made to add electricity to the various douches. This is, so far as I can ascertain, the first attempt which has been made to apply this powerful therapeutic agent in this way. By attaching one pole of the battery to the nozzle of the douche, and moving the other to different positions, either the whole or any part of the body can be made to complete the circle, and thus be brought under the action of electricity, and that too by either the continuous or interrupted currents. I have no doubt, that when fully carried out, this will add greatly to the utility of the douches, more especially in cases of paralysis, sciatica, lumbago, neuralgic rheumatism, and in restoring muscular tone, the loss of which is a prominent feature in gouty and rheumatic subjects through want of exercise.

Besides the baths already mentioned, there are several large swimming baths, shower baths, and douche baths; also wave baths, the douche ascendant, enema and lavement apparatus for the special treatment of diseases of women. A handsome room is being fitted up with every form of douche and spray apparatus, by means of which the thermal water may be applied, either in a continuous stream or in a minute state of pulverisation to the nose, ears, eyes, or throat. Sir Morell Mackenzie, when recently visiting Bath, spoke in the highest terms of this form of treatment for chronic laryngitis and certain other forms of throat disease.

TRICHOMYCOSIS NODOSA: A BACILLARY DISEASE OF HAIR.

By R. GLASGOW PATTESON, B.A., M.B.,

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Definition.—A peculiar condition, generally nodose in character, affecting the hairs of the axilla and scrotum, and due to the growth and encapsulation in the cortical layers of the shaft of a small, rod-shaped bacterium.

History.—To many observers it has long been a familiar fact that the hairs of the armpits and scrotum are liable to a peculiar affection which is not known to attack the hairs of any other part of the body, which seems to find only here the conditions of warmth and moisture necessary for its development, and the cause of which, though long suspected to be mycotic in nature, has hitherto succeeded in eluding the various methods of research employed. Although the descriptive accounts which have been published differ slightly from one another and from that which will be subsequently given, yet I have no doubt that these all in reality refer to the same condition, and that the appearances of the disease are merely in certain cases modified by the health and habits of the individual, and by the variations of warmth and moisture to which the organism is exposed. Nearly twenty years ago attention was first directed to this affection, by Paxton, of Chichester, in an article entitled, "On a Diseased Condition of the Hairs of the Axilla, probably of Parasitic Origin." His description is full, and, as far as it goes, accurate: "The affected hairs are of a lighter colour than those which remain normal, and are also swelled and knotty, and have a dull, gelatinous appearance. This deformity usually commences a few lines above the bulb, and extends over the whole remaining length of the hair; but in some cases a much smaller part is affected, or there may be only a few isolated knots. The swelling depends mainly on masses of foreign

matter attached to the hair in more or less of its circumference, but not usually surrounding it anywhere."

Little attention seems to have been paid to this observation until Sir Erasmus Wilson again described the disease, and named it "leptothrix," regarding its most prominent characteristic as "a loosening and partial detachment of the overlapping edges of the scales of the cuticle."² In a further description, published some years later, he attributes this exfoliation of the scales to the moist warmth of the axilla: "Sometimes the scales completely surround the hair; very commonly one side of the shaft is more affected than the rest, and presents the appearance of a fringe; and not infrequently the scales are roughened with earthy and saline crusts deposited by the sweat."³ It is quite evident that his acquaintance with the condition was only superficial, as the prominent characteristic—the hardness and insolubility of these nodes—is not even mentioned in any part of the description, and the roughness is attributed to the deposition of salts from the sweat, which, of course, would be readily soluble if such a deposition were at all likely to occur. These observations, however, drew attention to the condition in these countries, but by Continental dermatologists it remained long unnoticed. Hebra, Kaposi, and Neumann—the great names of the Vienna school—do not even refer to it, while by many others it is confounded with trichorrhæxis nodosa and other allied conditions. Dr. Liveing seems to have fallen into the same error. Writing on the subject of trichorrhæxis nodosa (the "trichoclasia" of Wilson, whose nomenclature he adopts), Dr. Liveing refers to having "met with a somewhat similar condition in the hairs of the axilla;"⁴ but all observers are agreed that, except the one case recorded by Devergie, in which the hairs of the scalp were affected, trichorrhæxis is only known to occur on the hairs of the face. Michelson gives a short account of the disease, adding the observation that the hairs of the genital region are also liable to be affected. After describing the yellowish masses which surround the hair "like a sheath," and "appear to have crystallised on the cortical spines," he dismisses the subject with the following remark: "The affection is to be attributed to the maceration caused by the profuse sweating, and may be sufficiently well classified under the term trichoptilosis, which Devergie has applied to similar conditions."⁵ But the condition described by Devergie as trichoptilosis does not bear the least resemblance to the one under consideration. It consists in a longitudinal splitting of the hair into fine filaments, which, being broken into unequal lengths, and becoming laterally arranged, give to the hair an appearance like a feather.⁶ It serves to show the character of this condition described by him, that Roeser regarded it as a stage of alopecia areata, in which disease a terminal fibrillation of the hair is found. The fullest and most recent account of the disease is that given by Dr. Radcliffe Crocker, under the heading "Leptothrix," in his work on *Diseases of the Skin*. "In the most marked cases the hairs are brittle, and generally break off if an attempt is made to pull them out. On holding a hair just removed up to the light, the borders are irregular and ragged, and it looks dull and lustreless, like a piece of wet string. On placing a hair under a microscope, nearly all along the shaft—but generally with some intervals of healthy hair, and occupying the whole or part of the circumference—is an irregular, lobed concretion, and, the divisions being directed upwards, it closely resembles the feather-end of an arrow. When the condition is slightly developed, it consists of circular, well-defined masses, lying in, but not encompassing, the shaft, and often three times its diameter."⁷

I have purposely given these full accounts of the descriptions of previous observers in order to show, as I think they conclusively do, that the essential features are the same, and that the variations that occur are merely modifications of the process caused in certain cases by accidental circumstances of environment.

Etiology.—As regards the cause of the disease, Paxton described it as "probably of parasitic origin." Indeed, he thought he had detected spores similar to those found in favus or ringworm, but could find no trace of a mycelium.⁸ Many others announced the

² *Lectures on Dermatology*, London, 1878. The name is derived from *λεπίς* (a scale), and *θρίξ* (hair).

³ Art. "Leptothrix," in Quain's *Dict. of Medicine*, London, 1882.

⁴ *Handbook on Diseases of the Skin*. Second Edition. London, 1884.

⁵ Michelson, in Von Ziemssen's *Handbuch der Hautkrankheiten*. Bd. ii, s. 150. Leipzig, 1884.

Annal. de Dermatol. et de Syphilig., 1872. The name—from *θρίξ* and *πίλωσις* (feathering)—was suggested by M. Litré.

⁷ *Annal. de Derm. et de Syph.*, t. ix, 3, 1878.

⁸ *Diseases of the Skin*, p. 619. London, 1885.

⁹ *Loc. cit.*, p. 135.

discovery of a fungus, only to have their opinions subsequently negatived. Of later years the theory of a mould fungus has been given up in accordance with the prevailing tendency to seek in bacteria the cause of every morbid process. In this connection Dr. Crocker observes:—"With a high power the structure seems to consist of minute round masses; and, probably, with our present knowledge of bacteriological methods, a micrococcus origin might be demonstrated."¹⁰ Still nearer the mark were the observations of Eberth,¹¹ which strangely seem to have been overlooked in this country.

In 1874, when engaged in the study of the various forms of bacteria occurring in sweat, he found in this secretion numerous granular bodies, the number of which increased in proportion to the hairiness of the part, being most numerous in the armpits and between the thighs. They exhibited movements, which he was in doubt whether to regard as vital or merely molecular, and he considered them to be micrococci. They also attacked the hairs, causing small knotty swellings visible to the naked eye, placed either on one side or partly surrounding the shaft. These swellings he found to be composed of bacterial elements, which he supposed were derived from the scales of the epidermis, and developed in the hairs under the favouring influence of an increased secretion of sweat. The surface of the hair was in many places burrowed out, and in the clefts lay masses of micrococci longitudinally disposed, occasionally causing spindle-shaped projections on the surface of the hair. He also found longer bacterial filaments, which lay at the periphery of these masses of micrococci, and which at first he was inclined to regard as mycelial filaments, but he afterwards arrived at the conclusion that they represented a stage in the development of the bacteria. He regarded them as a colourless species analogous to those causing red and blue sweat, now known to be the *Bacillus prodigiosus* and *Bacillus cyanogenes* respectively. When we consider that these investigations of Eberth's were carried out many years before the introduction of any of the modern improvements in staining, and were made on unstained specimens, or specimens stained with logwood alone, we cannot help wondering at his close approximation to the truth. For the cause of the disease as revealed by perfected methods of staining is, in a reality, a short rod bacterium, the colonies of which lying between the superficial cortical layers, and enveloping themselves in a firm, homogeneous capsule, cause respectively the splitting of the fibres and the nodes and surface irregularities which are so characteristic of the disease.

Macroscopic Appearances.—To the naked eye the hairs present an abnormally dry and dull appearance, and feel rough and knotted to the touch. Instead of presenting a smooth and lustrous surface they look as if steamed. In fact, the difference to sight and touch between the healthy and the diseased hair is the difference between polished and ground glass. On examining the hair against the light, or, better, with a simple lens, the roughness is seen to be due to the projection from the sides of the shaft of numerous very minute concretions, which may assume either of two forms, a nodular or a diffuse. The diffuse form may extend along the shaft for nearly its whole length with only narrow intervals of healthy hair, while the nodular form consists of small rounded masses, generally most thickly placed in the outer part (terminal third) of the shaft, and usually separated by considerable intervals of healthy hair. Both forms may not uncommonly be found in a single hair, the degree present being only a question of the stage of the process. These masses are firmly adherent, cannot be removed by forcible rubbing, and can only be scraped off with great difficulty and injury to the hair. The hairs cannot be said to be abnormally brittle, do not give way on being pulled out, have little tendency to break at these nodes, and, as a rule, end in fine, lanugo-like points beyond the limits of the disease. Occasionally, however, hairs are met with in which fracture has occurred through a node, and then the terminal point with the splitting and separation of the fibres, looks, under the microscope, like a bundle of bristles stuck into a ball of jelly. The disease may affect any part of the hair-shaft, but the "seat of election" is the middle third. Nodes are seldom found well-developed except on the peripheral parts of the hair; and when the disease travels high up the shaft towards the bulb, it always assumes the diffuse form. Under no circumstances does it ever penetrate into the hair follicle.

Microscopic Appearances.—The progressive character of the

¹⁰ *Loc. cit.*, p. 620.

¹¹ *Untersuchungen ueber Bakterien*, von Prof. C. J. Eberth, *Virchow's Archiv*, Bd. lxii, s. 504, et seq.

affection, from the peripheral end of the shaft towards its exit from the hair follicles, is sufficiently accounted for by the natural history of the disease. The bacilli journeying, as it were, from the outer world, travel up the shaft of the hair until they find a part sufficiently developed to supply them with the necessities of life. Here they begin their attack, and here the nodes are closely aggregated, sometimes completely obscuring the shaft, but never losing their nodular character. From about the junction of the outer and middle thirds the nodes are separated by longer intervals, or in more advanced cases the disease may here assume the diffuse form, gradually disappearing as the hair follicle is approached. In these parts which have been last attacked the first stages of the development of the bacilli can be well seen. Out of about fifty hairs examined, only in a few was any marked deviation from this typical arrangement to be found. We are therefore justified in concluding that the micro-organism is one always derived from external sources, and never under any conditions making its habitat in the hair follicles or sebaceous glands. This agrees with an observation of Dr. Crocker, who, in one of his cases, excised a portion of skin, and found the hair follicles and their appendages perfectly healthy.¹²

I come now to speak of the formation of the nodes. The bacilli lie altogether in the cortex of the shaft, and do not penetrate deeply into the hair. The maceration caused by the moisture and warmth of the parts where alone this affection is found (axillæ and scrotum) loosens the epidermal scales and allows an entrance to be thus effected by the bacilli into the parts beneath. This is well seen in those parts where the affection is still in an early stage. The bacilli burrow into the hair, lying at first in small pits or depressions on its surface, and as they develop, the pressure of their growth causes a longitudinal splitting of the cortical fibres which finally leads to their rupture and the curling up of the separated ends. At the same time takes place the formation of the hard, homogeneous, or slightly granular substance which lies between and around the bacteria, as it were encapsulating them, and forming the surface projections or nodes. Into these masses the curled ends of the ruptured fibres can, in unstained specimens, be seen projecting. (See Fig. 1.) This also

Fig. 1.—Hair from axilla affected with trichomycosis nodosa, showing splitting of cortical fibres and transparent homogeneous nodes. X 50.

serves as a splint, supporting the shaft at these weakened points, and thus explaining the slight tendency there is to fracture of the hair. The material which is thus thrown out is exactly similar in appearance to that with which pediculi fasten their ova to the hairs. It is extremely hard, is insoluble in such solvents as alcohol, ether, chloroform, benzol, benzin, and spirits of turpentine; and resists the action of strong acid and alkaline solutions. It is in the natural state of a pale yellowish colour, and stains a deep brown with iodine and a dark purple with methyl-violet. On account of this affinity for the latter dye it is, as a rule, only possible to see the bacilli at the outer edges of the nodes where they blend with the shaft, and in those places where they are just effecting an entrance into the cortex, as the treatment required to decolorise the nodes also decolorises the bacilli. The nodular form is rarely observed on the hairs of the scrotum, and then only in a slight degree. Very often in this situation no outlying masses are formed, but the whole extent of the shaft is burrowed superficially by bacteria, presenting a most peculiar worm-eaten appearance.¹³ In other cases the concretions are placed laterally, with little or no intervening healthy hair, resembling, as Dr. Crocker suggests, "the feather end of an arrow."

The Bacilli.—The bacilli are short fine rods with slightly rounded ends, about two to three times as long as broad, and about one-fourth the diameter of a red blood corpuscle. They stain readily with any of the aniline dyes, but are best seen when stained by Gram's method. Examined in a hanging drop they are found to be non-motile, exhibiting only Brownian or molecular movement. They are sometimes joined two or three together, but seldom form longer threads, though this may be accounted

for by the forcible manipulation required to isolate them from the substance by which they are surrounded. The accompanying illustrations show the appearance presented by them at the margin of a node (Fig. 2), and also their form when isolated and more highly magnified (Fig. 3).

Fig. 2.—Bacilli from margin of node in trichomycosis nodosa. Gram's method, $\frac{1}{2}$ oil immersion.

Cultivation Experiments.¹⁴—Attempts were first made to grow the bacilli on sterilised potatoes, both at ordinary and body temperature, but without success. At the end of a week no sign of growth could be detected, and a cover-glass preparation made from a scraping of the cut surface of the potato showed only starch granules and a few dead bacteria. Inoculations of tubes of peptone-gelatine also yielded negative results, the gelatine remaining perfectly transparent after many days. As the reaction of the axilla was acid, acidulation of the gelatine was also tried, but without avail. It is therefore evident that the ordinary methods of culture do not supply the conditions necessary for the growth of the microbe, and that experiments must be undertaken in various media and under varying conditions of temperature, moisture, etc., before success can be hoped for. These I hope to have further opportunities of carrying out.

Fig. 3.—Trichomycosis nodosa. Cover-glass preparation of bacilli from hair. Fuchsin staining, X 1,500.

Nomenclature—In concluding, it is only necessary to add that the name "leptothrix," conveying as it does a false idea of the pathological condition present, has been discarded, and that of "trichomycosis nodosa" substituted; the first term to indicate the bacterial origin of the disease, and the second to indicate its most prominent characteristic, and the one which, when present, usually leads to its recognition.

NOTE.—Since writing the above I have been enabled, by the kindness of Dr. Walter G. Smith, to examine the hairs of the axilla from another case presenting the same characteristics. The presence of bacilli, identical in form and having a similar distribution, was demonstrated without difficulty. As the hairs had been in his possession some years, cultivation experiments could not be undertaken. My attention has also been called to a paper

¹² Scrapings of the epidermis examined for bacilli yielded negative results, though Eberth states he found micrococci.

¹³ It is possible that the formation of nodes in this situation may be prevented by the constant friction that occurs in walking.

¹⁴ These cultures were undertaken in the laboratory of Trinity College, by kind permission of Professor Purser, to whose advice and assistance I am much indebted.

in a recent number of *Virchow's Archiv*, which I had overlooked, in which Behrend describes and figures a somewhat similar nodosity of hair due to the presence of micrococci. He also describes a method of double-staining, employed by Guttman, with fuchsin and methylene-blue in watery solution, with which, however I have been unable to obtain as satisfactory results as with Gram's method, using eosin as a contrast stain.

REMARKS UPON THE TREATMENT OF CANCEROUS STRICTURE OF THE OESOPHAGUS BY MEANS OF INTUBATION: WITH ILLUSTRATIVE CASES.

By GEORGE HOOK RODMAN, M.D.

DURING 1887, whilst House-Surgeon at the Radcliffe Infirmary, Oxford, I was enabled, through the courtesy of Mr. Horatio Symonds, to carry out this form of treatment in several instances of cancer of the oesophagus, and the results then obtained, as far as the alleviation of suffering, the improving of nutrition, and the prolongation of life were concerned, compared very favourably with the results of treatment of similar cases by gastrostomy.

Mr. A. Durham reports that, up to 1883, he knew of 50 cases of gastrostomy for cancer of the oesophagus, of which cases 25 resulted in death within one week of operation, and of these 15 died within forty-eight hours. In only 5 cases of the 50 did the patient survive three months. A similar experience is noted by Polum¹; for, out of 103 cases collected by him, only 50 lived for more than one week.

CASE I.—G. B., aged 60, a publican, was admitted an in-patient on March 3rd, 1887, having previously been under my notice as an out-patient suffering from dysphagia. On March 2nd he was unable even to swallow fluids, and at this time weighed 8 stone 3 lbs. There was no history of syphilis or of the swallowing of a corrosive as the cause of his trouble. An examination of his throat and chest failed to show the presence of any tumour—aneurysmal or otherwise. An ordinary oesophageal bougie was arrested at a point ten inches and a half from the central upper incisor teeth. I was able, at the first attempt, to pass a No. 11-sized, short funnelled tube through the stricture. On a diet of beef-tea (strained), custard, whipped eggs, and port-wine his general condition rapidly improved, his weight increasing by 7 lbs. during the first eight days. To the upper end of the tube was fixed a silken cord, which, passing through the mouth, was attached to the ear.

G. B. was made an out-patient on April 7th; he reappeared on May 4th, with the tube, which had remained *in situ* for eight weeks, blocked; but by means of the silk it was easily withdrawn, and on removal was found to be obstructed at the eye. This tube was replaced on May 14th by a No. 9, and this worked well till June 11th, when it was thought that the muco-purulent secretion from an extension upwards of the growth was the cause of the obstruction in the tube, so a long india-rubber funnelled tube was substituted for the short one. The patient was fed through this, and subsequently died of exhaustion on August 21st, 1887, 171 days after his primary admission. The necropsy disclosed malignant stricture of the oesophagus.

CASE II was also that of a publican, A. S., aged 57, who was admitted in a state of collapse on April 15th, 1887, suffering from inability to swallow even fluids, which had been complete for three days. The usual history of malignant stricture of the oesophagus was given, but no swallowing of a corrosive or of syphilitic infection could be obtained as a cause. He had had trouble in deglutition for seven months. Previously to the onset of his illness, he weighed 12 stone; he weighed on admission 8 stone 4½ lbs. The stricture arrested a bougie at thirteen inches and a half from the teeth. I made several attempts to pass a short No. 9 tube without success, but subsequently a No. 7 was passed through the stricture with ease. By means of this, a carefully prepared diet consisting of beef-tea two pints, milk two pints, two eggs, thin corn-flour, cocoa and port-wine 3iv, together with 3iss cod-liver oil per day, was introduced into his stomach. Under this treatment he rapidly improved, and on April 20th, five days after admission, he scaled 9 stone 2½ lbs. (an increase of 11½ lbs.) His food was taken with a relish, and he suffered no inconvenience from the presence of the tube; in fact, he stated that if he had not seen the tube passed down his throat, he would not have known of its

existence, save for the silken cord passing through his mouth. On April 25th he scaled 9 stone 6½ lbs., thus having gained 16 lbs. in ten days. An accident, for which I was not prepared, happened shortly after his discharge as an out-patient on April 25th. The constant friction of the teeth upon the silken cord led to its severance, and as the result the tube was no longer within easy reach. Attempts to remove by forceps proved futile. The patient was most emphatically warned against the taking of any food likely to clog the tube, and it was doubtless, owing to his careful observance of these directions that the tube worked well for a lengthened period. He presented himself for inspection from time to time, and retained his strength, being again able to attend to his business. Matters progressed in this way till October 3rd, when during the morning he handed me the tube, still perfectly intact, with the explanation that, "whilst coughing, it had suddenly come up." This tube had been *in situ* since April 15th, a period of 171 days. At his own request, he was allowed to dispense with the tube, but returned in the course of three weeks, quite unable to swallow. Several tubes were subsequently introduced, but became blocked in the same way, and probably from the same cause as in Case I. On October 28th a long tube was substituted, but the patient died on November 4th. No necropsy was permitted. In this case, notwithstanding that the patient was nearly starved when admitted on April 15th, and certainly not in a condition in which a severe operation such as gastrostomy would be justified, under the treatment by intubation, he survived for a period of 203 days, during a considerable portion of which he was enabled to carry on his usual duties.

From the lesson of this case, I sought for some means to prevent a similar slipping of the tube beyond reach, and shortly after had a chance of testing a tube, in which I had replaced the silken cord by "gimp," such as is in use in pike fishing, to prevent the sawing through of the contiguity of the line by the pike's teeth. On my next patient I was able to try this modification, and then found that there was a decided disadvantage—in that the harsher cord caused irritation of the corner of the mouth; this, however, I obviated by covering the portion of the gimp passing through the mouth with a thin rubber casing. The case of A. S. further teaches that a tube may remain, without being changed, for a much longer period than that usually advised. In this instance the same tube remained *in situ* from April 15th to October 3rd, a period of upwards of twenty-four weeks. More frequent changing, besides tending to irritate and thus render the growth more rapid, naturally increases the risk of forming a false passage—a not uncommon accident where the growth is soft and the oesophageal walls much thinned and deflected from their normal course. Another point of considerable practical importance concerns the construction of the tubes. They should be so made that the eye is at the extreme end of the tube; or, if lateral, that the tube should not be perforated to the slightest degree below the level of the eye. If these details be carefully attended to, there will be less risk of the action of the gastric juice causing a small clot of casein or other material, which will, in its turn, form the nucleus of a larger plug that will, sooner or later, necessitate the substitution of a fresh tube. No septic troubles were set up by the prolonged wearing of the same tube.

CLINICAL MEMORANDA.

PNEUMONIC FEVER, OLD AND NEW.

As a small contribution to the subject under discussion, I should like to state that a year ago I treated three cases of pneumonia occurring in the same cottage, and apparently of an infectious nature. The first to fall ill was the occupier of the house. His wife nursed him for about a week, and then, to my surprise, herself developed acute pneumonia. The eldest son, a lad of 19, tried to nurse them both, but rapidly broke down and became fearfully ill with acute double pneumonia. The father, owing largely to his intemperate habits, failed and died. His wife and son barely escaped with their lives. In all three cases fever ran high, there was delirium at night, great rapidity of breathing, and more bloody expectoration than is usually seen in ordinary pneumonia.

In treating these cases I did not think I was dealing with some new specific fever, for although I had never before seen cases of infectious pneumonia, I knew they occurred, and I had a clear

¹ Arch. gén. de Méd., November, 1883.