operation. If in the intervals between these injections the hip be kept well enveloped in salicylic wool there will be but little risk of septic infection. When a Thomas's splint is employed after excision of the hip it is well to have its rods made to diverge widely so that the affected limb shall be strongly abducted during convalescence. When the joint becomes firm in this position the effect is of course to cause tilting downwards of the pelvis on the affected side when the patient begins to walk. The result is that the limb is restored almost or completely to the same level as its fellow, and the actual shortening is compensated for.

The absolute rest secured to the hip-joint from the first by the treatment just described does for it what the plaster-of-Paris does for the knee. Not only does it save the patient from suffering, but it diminishes the hyperæmia about the joint, and thus in all probability reduces the risk of a local or general spread of the disease after operation. At the same time the patient can cease to be confined to bed the moment it is applied.

I had hoped, Sir, to be able to consider the application of the principles of treatment we have been discussing to the removal of tubercular disease from the elbow and shoulder joints; time fails me, however. But I trust that in what I have said, however imperfectly, I have justified the remark made in the first of these lectures—namely, that the excision of scrofulous or tubercular disease from a joint is no longer a mere mechanical problem; that it is no longer a mere question of removing a certain amount of dead or inflamed bone in the readiest manner, and drainage of the resulting wound until it heals. I hope that I have made good the claim of the operator in this field of surgery to be considered, not a mere skilful artificer, but a scientific worker, who brings a knowledge of anatomy, physiology, biology, and chemistry to a glorious task.

I trust, also, that what I have said may appear to others to justify that *hopefulness* as regards our future success in the struggle against tubercular disease which I feel myself. If the affection is parasitic, as no doubt it is, we may expect to check its spread in the future in ways never yet attempted, or, indeed, thought of. If the belief is warranted that tuberculosis is not inherited in the vast majority of cases, but acquired, how much more promising the outlook! If the disease be inoculable on any surface of the body, and if it is capable of being reinoculated from one part of an operation wound to another, we may hope to prevent its inroads by very simple precautions never taken before; and, when it has gained access to the body, and is making local ravages, our hopes of arresting them by operation are far greater now than heretofore. For now, relieved of the nightmare of the septic wound diseases, we can undertake operations at an early stage of the affection without fear, and remove all the local mischief without those wide-reaching resections of bone which brought shock and other attendant risks in their train; and we can do so with better prospects as regards the functions of the joint than formerly. The pain of the after-treatment has also been immensely reduced by the possibility with aseptic wounds of permanent dressings, and the patient may consequently be invited to face such an operation with far less fear than of old.

In conclusion, I should like to say that I have purposely abstained from troubling my audience by quoting either my own experiences or observations or the authorities in detail for all the observations alluded to in the course of these lectures. The subject is so large, and its literature so very extensive, that this would have been intolerably wearisome to you. I shall, however, append a list containing some of those sources of information which have appeared to me most reliable, on careful study, and to which reference can be made by those who desire to pursue the subject further.

I hope also before long to be able to collect a sufficiency of reliable statistics of recent experiences in this field of surgery to emphasise more fully those conclusions I have ventured to put forward, to which you have listened with so much forbearance.

SOME OF THE WORKS CONSULTED ON QUESTIONS RELATING TO THE SUBJECT OF THE ABOVE LECTURES.

Schüller, *Untersuchungen über die Entstehungen und Ursache der scrophulösen und tuberculösen Gelenkleiden*, Stuttgart, 1880; W. Cheyne, *Practitioner*, 1883; Baumgarten, *Centralblatt für die Med. Wissenschaften*, 1883; Baumgarten, *Zeitschrift. f. Klin. Med.*, Bd. 9 and 10; E. Klebs, *Allgem. Pathologie*, Theil. I., 1887; Treves, *Holmes's System of Surgery*; Tscherning, *Fortsch. d. Med.*, Bd. 3, p. 65, 1885; Lehmann, *Deutsch. Med., Wochens.*, 1886, No. 9-13; Middeldorpf, *Fortsch. d. Med.*, 1886, Bd. 4, p. 249; Elsenberg, *Centralbl. f. Chir.*, 1887, pp. 52 and 651; Müller, *Fortsch. d.*

Med., 1886, p. 548; Jani, *Centralbl. f. Chir.*, 1886, p. 729; Kraske, *ibid.*, 1885, p. 809; Baug, *Fortsch. d. Med.*, 1885, p. 129; John, *ibid.*, p. 198; Wesener, *Fortsch. d. Med.*, 1886, p. 383; Wahl, *Deutsch. Med. Wochens.*, 1885; Klebs, *Virchow's Archiv.*, Bd. 49, p. 291; Weigert, *ibid.*, Bd. 88, p. 307; Stilling, *ibid.*, p. 111; Arnold, *ibid.*, p. 397; Leser, *Centralbl. f. Chir.*, 1888, No. 16; Koch, *Centralbl. f. Chir.*, 1884, p. 341; Pfeiffer, *Fortsch. d. Med.*, 1888, No. 1, p. 33; Langerhans, *Virchow's Archiv.*, Bd. 112, p. 16; Croft, *Clin. Soc. Transact.*, vol. xiv, p. 224; Marsh, *ibid.*; Korff, *Deutsch. Zeitsch. für Chir.*, 1885, p. 149; Willemer, *ibid.*, p. 268; Wartmann, *ibid.*, 1886; Sandler, *ibid.*, 1888, Heft 3 and 4; Walzberg & Riedel, *ibid.*, 1881, Heft 1 and 2; Caumont, *ibid.*, 1884, Heft 3 and 4; Gerster, *Annals of Surg.*, Ap., 1888; Lossen, *Hand. der allgem. und speciel. Pathologie und Chir.*, Pitha-Billroth, 1882, Bd. 2, Abtheil 2, Lief 4; Koenig, *Die Tuberculose der Knochen und Gelenke*, 1884; Leser, *Centralbl. f. Chir.*, 1888, and *Fortsch. der Med.*, Bd. V., p. 501; Grünfeld, *Zeitsch. für Heilkunde*, Bd. VIII., p. 191; *Centralbl. f. Chir.*, 1888.

Note.—A typographical error was overlooked in Lecture II, page 1263, by which 195 stands for 95 in Willemer's statistics (three lines from bottom of second column). These figures thus corrected show Willemer's statistics in the least favourable light. But if all cases treated by incision and drainage be included the total number rises to 128, making the mortality only 10 per cent., and if the cases treated by primary amputation be excluded the percentage of deaths further falls to 9.0.

REMARKS ON PAROXYSMAL SNEEZING.

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PART II.

THE intimate relation existing between intermittent sneezing and asthma has already been referred to, and we might narrate many cases in which the symptoms of both have been observed in the same person; but the following brief outline will serve equally well to illustrate the point. A patient for some years suffered from severe intermittent sneezing, which then became complicated with asthma, the asthma steadily increasing in severity, whilst the sneezing grew less and less, till at last it almost ceased. The asthma was of the peptic variety, and unassociated with bronchitis. Bed-dust always induced severe attacks, first of sneezing then of asthma. As bed-dust is insoluble, the part affected must have been either the mucous membrane or the terminations of the nerves, first of the mucous membrane of the nose, next of the lungs, whilst the change in the type of the disease from intermittent sneezing to well-marked peptic asthma favours the theory that the seat of the affection was in the nervous centres.

Our cases show that paroxysmal sneezing is related on one hand to bronchitic and peptic asthma, and on the other to hay fever. They are allied to the bronchitic form of asthma in being excited by dust, cold, and direct irritants, and to bronchitic asthma through those cases which commence with paroxysmal sneezing, and are subsequently complicated with bronchial asthma. To the peptic forms of asthma this paroxysmal sneezing is related through those cases in which the attack is excited by food.

In nearly all these cases, judging from the extent of the itching, a part or even the whole of the nasal passages is affected, and often the eyes, soft palate, and throat are also involved. In some instances, however, we have found that the nervous structures implicated are much more limited; indeed, the nose may altogether escape. In one very curious case the itching was entirely confined to the inner canthus of the eye, whilst in another it involved the whole of an eyeball.

The following series of cases occurring in the course of three generations of the same family serves to demonstrate the hereditary connection existing between intermittent sneezing and asthma.

The first member of the family, whom we will call the grandfather, was troubled with asthma for years, in fact, up to the time

of his death, which occurred at the age of 80. His son, whom we will call the father, and who was under our care, suffered from hay-asthma from childhood, his attacks lasting for only about six weeks in the hay season. On going into a hayfield, or, indeed, near one, he is seized immediately with intense itching of the whole of the inside of the nose, and of the entire conjunctiva of both eyes and of the throat, accompanied by violent sneezing and profuse discharge from the eyes and nose. His eyes become blood-shot and the lids swell, often to such an extent that he can scarcely see. His breathing is very difficult, but there is no expectoration. So intensely susceptible is he that a field a mile off will affect him, and if his children play in the field and then come indoors, he has an attack. All flowers will at this particular time bring on an attack, but they do not do so at any other season. Strong sunlight will excite an attack, and he usually takes the precaution of wearing big blue spectacles when outdoors. His sister, who is now 24 years of age, has had hay-asthma for about four years. His son, who represents the third generation, is aged 10, and has suffered severely from asthma since a sharp attack of bronchitis which he had when 3 years old. He suffers all the year round almost continuously from severe itching inside the nose, in the eyes, throat, and under the chin. When these symptoms are aggravated he has severe sneezing, with free discharge of a clear fluid from the nose. Any kind of dust aggravates the symptoms, pollen especially. He suffers also from wheezing, and, when the itching and sneezing are aggravated, from violent cough and difficulty of breathing. All these symptoms are influenced by food; thus, the itching and the dyspnoea are always made worse by pastry, sweets, and especially by a heavy meal taken in the evening or late at night. He has been much worse since an attack of measles three months ago, and now almost any food, even bread and butter, increases both the itching and difficulty of breathing.

In another case, a lady who suffered from bronchial asthma subsequently replaced by hay-fever, had two children, one of whom, the elder, has been subject to asthma and bronchitis since the age of 5, whilst the younger is a paroxysmal sneezer. We have other cases which illustrate the intimate relation which exists between bronchitic asthma, peptic asthma, paroxysmal sneezing, and hay-fever, these varieties of the same complaint occurring in different members of the same family, either concurrently or in successive generations. In one case a lady who was an asthmatic for many years, had twelve children, all of whom, without exception, suffered from one or other form of this complaint.

The change in the type of a disease in its transmission from parent to child is frequently met with in asthmatics. For example, an asthmatic parent who suffers from peptic or bronchitic asthma may have children, one of whom has hay-fever, another intermittent sneezing, apparently independent of pollen, and a third who is the subject of simple peptic asthma. The influence of hereditary transmission is well illustrated by the following case.

A lady, aged about 60, suffers from sneezing, but only in the morning before breakfast. She is unable to assign any exciting cause for the attacks. Food, stimulants, dust, flowers, hay and smoke do not affect her. Damp places and damp weather favour the occurrence of the attacks, but will not excite them. Change of air gives relief for about a fortnight, but then loses its effect. Any change is temporarily beneficial, and it makes no difference where she goes. In former years she was always worse just before and during a period. She has intense itching in the right nostril under the bridge of the nose, and where the nasal bones join the cartilages. The itching extends to the right eye and the lower lid. During the attack the sneezing is very violent, so that it exhausts her and strains her muscles. There is a profuse watery discharge from both eyes and from the nose during the attacks. When she catches a real cold, it runs its usual course, and the other symptoms cease. She has one son, who is a violent paroxysmal sneezer, another who is a hay-asthmatic, and a third who is a morning sneezer. This case also illustrates the influence of unilateral stimulation in inducing bilateral secretion.

A certain vague hereditary relationship can sometimes be traced between paroxysmal sneezing, asthma, migraine, and some forms of hysteria. For example, we had under treatment a young lady, aged 20, who for many months persistently refused food, taking nourishment in the smallest possible quantity compatible with the maintenance of life. She lived in the country, and until she was nearly 19, was a hearty, well nourished woman, re-

nowned over the whole country side for her beauty and buoyancy of spirits. She was fond of riding, walking, tennis, and all outdoor sports, and was always the life of the party. Suddenly and without any assignable reason, and without the existence of organic disease as far as could be ascertained, she changed her habits, and spent the whole day moping about the house, taking no interest in anything. Her tastes were peculiar. She disliked peas and strawberries, ices, and many other articles of diet usually affected by ladies, and preferred castor oil to champagne. Her favourite dishes were slate-pencil, cinders, and sealing-wax. She rapidly lost weight, and when she came under our care turned the scale at very little over six stone. She speedily improved under massage, but it was no easy matter to get her to take a good meal. Her family history was peculiar. Her father suffered severely from neuralgia, and his mother was for years afflicted with migraine. The father's brother was a paroxysmal sneezer, whilst one of his daughters, until she married, had a great dislike for food of all kinds, and lived chiefly on sweets. Her brother, a young fellow of 30, rarely or never eats meat. The patient's only sister is fastidious in her dietary, and suffers severely from asthma, but whether peptic or bronchitic we were unable to learn.

Sometimes both in asthma and bronchitis we meet with cases where irritation of some distant spot far removed from the chest or seat of pain will induce an attack. In a case recorded by Anstie it is stated that irritation of a small spot at the back of the head, over the occipital nerve, would immediately induce an attack of supraorbital neuralgia, whilst in another instance the application of cold to one instep invariably induced a paroxysm of dyspnoea. A clergyman assured us that he could at any time induce an attack of paroxysmal sneezing, lasting ten minutes, and accompanied by profuse running from the nose, by rubbing his tongue against the roof of the mouth, close to the teeth. He cannot discover that anything else brings on an attack, and he is quite unaffected by pollen or dust of any kind.

It is generally recognised that when attacks of sneezing and asthma both affect a patient, they do not, as a rule, occur at the same time; one form replacing the other; in fact, local applications which arrest the sneezing sometimes induce an attack of dyspnoea. It often happens that as the asthmatic paroxysms become more frequent and more prolonged, the attacks of sneezing temporarily cease.

In children sneezing is easily provoked, and their occurring frequently without assignable cause is not infrequently the first indication of an asthmatic tendency—a fact not generally recognised. Sometimes, however, both in children and adults asthma precedes the attacks of paroxysmal sneezing. The influence of locality in exciting or warding off attacks of asthma is well known, and this applies equally to cases of sneezing. A patient who was under our care for hay-asthma was severely affected in his native county Sussex, but was quite free from his complaint, even when the grass was in full bloom, in Devonshire, at Windermere, and in Scotland. Another patient, a lady who, when at Hampstead, suffers from fits of sneezing alternating with attacks of asthma, is perfectly free from both at Brighton, Eastbourne, Hastings, Bournemouth, and other seaside resorts. This immunity is not due to the direction of the wind, for she is quite unaffected whether there be a sea-breeze or a land-breeze. To use her own expression, the place which suits one of her complaints suits both.

Not uncommonly as the patient grows older, or as the bronchial attacks decrease in frequency and severity, they are replaced by sneezing or peptic asthma. Sometimes, too, as the attack of bronchitis or bronchial asthma subsides, it is followed by an attack of paroxysmal sneezing lasting for some days, with but slight intermission. This was observed in the case of a lady who uniformly had three or four bad attacks of bronchitis every year, each being followed by a week's sneezing.

We know that asthma, like many other neuroses, is greatly influenced through the emotional centres, that a sudden fright will sometimes at once cut short an attack of asthma, or may, on the other hand, induce a paroxysm. Salter relates the case of an asthmatic who was at once relieved of a severe attack by the occurrence of a fire in the opposite house. At the time the alarm was given he was in bed, breathing with the greatest difficulty, and unable to move. When the excitement was at its height he was seen, to the astonishment of his friends, standing at the open window in his night-shirt, cheering the efforts of the firemen. This is equally true of paroxysmal sneezing, and it is a common

practice in some parts of the country to arrest an attack by suddenly slapping the patient on the back, or startling him in some similar manner. Sometimes an attack of paroxysmal sneezing is uniformly excited, not so much by emotional causes as by ideation, or the association of ideas. A young lady, a native of Queensland, who for many years suffered from hay-asthma and paroxysmal sneezing, was convinced that the seat of her malady was in the left arm, and she assured us that any movement of that member, however slight, would invariably induce an attack. So convinced was she of this that she used only the right arm and hand, keeping the left supported by her dress or in a sling. If inadvertently she used the left hand, even for the simplest purpose, a paroxysm was excited. She was most explicit on this point, and, as far as we were enabled to test the matter for ourselves, her statement appeared to be correct. Carrying a fan or her umbrella in the left hand would act as the exciting cause, but, curiously enough, not until her attention was called to the fact. Here the impression must have been purely emotional or ideal, for it is inconceivable that the movement of any particular joint or the contraction of any special group of muscles could act in any other way in inducing a paroxysmal condition, which often failed to expend its force for many hours. In the same category of ideal, or perhaps we should say nondescript, cases, may be included the well known instance of the lady who had an attack of rose-fever from smelling an artificial rose. She was probably of the same temperament as the patient who was attacked with coryza from standing for a few minutes in front of a picture of a hay-field at the Academy.

The remedies employed in the treatment of paroxysmal sneezing may be divided into two categories: first, those which break up the paroxysm; and, secondly, those which by a gradual action so modify the pathological condition of the mucous membrane that the predisposition to their return is removed. In the former class first and foremost comes cocaine. Some three or four years ago we had under our care a student of the Westminster Hospital, Mr. John Watson, who gave a most interesting account of his observations on the topical application of cocaine tabloids. The attacks in his case usually commenced about the last week in May, and continued without intermission until the end of July, the discomfort and inconvenience experienced being so great that during the summer months he was practically incapacitated for work. Over and over again has he left our lecture on *materia medica*, his handkerchief to his nose and his eyes suffused with tears. His most prominent symptom was sneezing, which came on in paroxysms often in the most interesting part of an exposition of the physiological action of some new and valuable drug. The attacks, he assured us, were quite uncontrollable, and he often had to resort to violent muscular exercise, such as a game of billiards, to subdue them. He was fond of theatrical entertainments, and found peculiar relief in the atmosphere of the playhouse. Other symptoms were itching and irritation of the nose, with smarting and tickling of the mucous membrane of the nares and septum. There was an irresistible desire to violently rub the offending member with a coarse pocket handkerchief, although painful experience had taught him that it ultimately intensified the trouble and irritation, which returned with redoubled vigour immediately after the application. At the same time there was a copious secretion of acrid mucus, which seemed to act as an irritant and inflame the surface with which it came in contact. There was tickling and itching of the margin of the lids, which were pressed together in the vain hope of obtaining relief. The hard palate burnt and itched so intensely that the tongue had to be forced backwards against it in order to relieve it. The pollen of hay, either growing or stacked, was found to be the most potent cause, but minute particles of any kind floating in the air would act in a like manner. The susceptibility was so great that no remedy which had been tried, and they were many, had afforded the slightest relief. At last, at our suggestion, he obtained some tabloids of cocaine, which he introduced into each nostril, pushing them well up with the tip of the little finger. It was found that they would adhere to the mucous membrane without difficulty, and that they caused no pain or irritation, but afforded prompt and instant relief, not only to the coryza, but to the accompanying symptoms. The tabloids first employed contained a sixth of a grain, but subsequently the half-grain tabloids were substituted with advantage. As a rule, a single application checks the paroxysm, but some patients find it necessary to repeat the application several times a day. We learn from a communication recently received from Mr. Watson that he has adopted this

mode of treatment in a large number of cases, and with uniform success.

As an example of the rapidity with which cocaine acts in cutting short hay-fever and paroxysmal sneezing, we may mention that at a public dinner last summer we sat next to an American gentleman, well known on both sides of the Atlantic, whose misfortune it was to have to deliver the speech of the evening. The table was covered with flowers, and our friend, who was a hay-asthmatic, soon commenced sneezing, and rapidly exhausted the resources not only of his pocket-handkerchief, but of the spare table napkins. He could hardly breathe, and certainly for the moment he was no orator. It suddenly dawned on us that we had a tube of cocaine tabloids in our waistcoat pocket. We offered them to him, and, instantly recognising their use, he plunged them up his nostrils. Almost immediately relief was obtained, and a few minutes later he was on his legs, speaking with that fluent ease and distinctness for which he is justly renowned.

We have prescribed these cocaine tabloids for many actors and reciters who have been subject to sneezing, and they have rarely failed to effect the desired object. We prefer them to bougies and other gelatine preparations of cocaine. In one case the cocaine, topically applied, arrested the sneezing and irritability of the nose, but induced an attack of asthma.

Pungent inhalations of all kinds are useful in cutting short the attacks of sneezing, and apparently they act by substituting for the pathological irritation another and an artificial form which is powerless to excite the paroxysm. Strong ammonia, carbolic acid, camphor, and iodine may all be employed for the purpose. The pungent smelling salts sold in the shops often answer admirably, but the palm, we think, must be given to iodine. We usually order it in the form of the liniment, instructing the patient to carry a small bottle in his pocket, taking care, of course, that it does not escape, and to take a sniff or two on the onset of the symptoms. We have notes of many cases in which this simple method of treatment has proved wonderfully efficacious. Pure terebene, pinol, and eucalyptine are useful to inhale, and are preferred by some patients. A few drops of chloroform placed in the palm of the hand and inhaled during the attack will sometimes cut it short. In some cases of hay-fever we have found inhalations of creasote useful. The best strength is ten drops in a pint of hot water, the steam being inhaled for a few minutes. A popular remedy is essence of camphor, a saturated solution in alcohol, two or three drops being taken on sugar every ten minutes. Inhalations of camphor are also useful.

Tobacco smoking will often answer admirably, though in some cases we have known it fail. During the hay-asthma season, from about the middle of May to the end of July, the sufferer should regularly smoke a good cigar as a preventive the last thing on going to bed, or, better still, when he is in bed. The sedative influence of the cigar will often ensure a good night's rest, but the powerful depressing action of strong tobacco may be necessary to cut short the paroxysm when once established. Some patients prefer the Indian tobacco, *lobelia inflata*, to the ordinary cigar or pipe. Nitre papers burnt in the bedroom may prove useful, but those commonly prepared are too weak to do much good. We employ a nitre paper consisting of six thicknesses of blotting paper steeped in a saturated solution of nitrate of potassium and chlorate of potassium. When dry it should be sprinkled with essence of camphor, compound tincture of benzoin, tincture of sumbul, or some preparation of stramonium, and burnt on a tin plate at the bedside. The efficacy of Himrod's powder is so generally recognised as to call for no comment. It, like its congeners, the Green mountain cure, Bliss's cure, and their numerous imitations, probably contains nitre, lobelia, and stramonium. Coffee is not uncommonly employed to cut short attacks of hay-fever, but to be of use it must be black and strong, and should be taken quite at the onset of the paroxysm. It is so valuable a remedy that the hay-asthmatic should never drink it as a beverage, but should reserve it strictly as a medicine. We often prescribe the effervescent citrate of caffeine with advantage.

A nasal douche or spray of sulphate of quinine is said to be useful in hay-fever, but in our hands it has not yielded good results in the treatment of paroxysmal sneezing. Hazeline, an aqueous distillate prepared from the fresh bark of *hamamelis virginica* is a capital remedy both for hay-fever due to pollen and simple sneezing. When snuffed up the nostrils it aborts the attacks, and when taken internally in twenty-minim doses three times a day, it lessens the hyperexcitability of the mucous membranes of the nose and respiratory tracts.

Foremost in our second category of remedies, that is to say, those which modify the condition of the mucous membranes, and prevent the occurrence of the attacks, we place the iodides. It matters little, we think, whether the potassium, sodium, or ammonium salt be given. We prescribe it either alone in water or in a mixture flavoured with syrup of Virginian prune. The inhalation of iodine is indicated when there is itching of the nose or of the inner canthus of one or both eyes, sneezing, running at the nose of a clear watery fluid, weeping of the eyes, and severe frontal headache. Our plan is to warm a jug holding about a quart by rinsing it out with boiling water, then partly to fill with hot water, and add from twenty to thirty drops of tincture of iodine. The patient is directed to put his mouth over the jug and inhale the iodised steam, his head and the jug being covered with a large towel. This method will be found in many cases to be very successful.

One of our patients, in whom iodide of potassium and the other iodides produced a very disagreeable prickly sensation in the throat, experienced the same phenomenon after a trial of a preparation called "spirone," and he was convinced that it contained iodine in some form. Mr. Martindale was good enough to analyse it for us in his laboratory, and found that it consisted essentially of a mixture of iodide of potassium and acetone. It was then submitted to Dr. Paul of the Pharmaceutical Society, who reports as follows:

"It has a specific gravity of 1029. Nearly half its volume consists of acetone with a little water. It yields, on evaporation, about 24 per cent. of glycerine, and about 2 per cent. of saline residue, which, when incinerated, is found to consist of 1.7 per cent. of iodide of potassium."

It is a somewhat curious coincidence that for some years we have employed with advantage a 2 per cent. aqueous solution of iodide of potassium in the treatment not only of sneezing but of chronic bronchitis and asthma. Our attention was directed to this remedy when making a series of experiments on the value of the ipecacuanha-wine spray in winter cough. We know that iodide of ethyl is useful in asthma, and it is probable that its beneficial effects are due to the iodine which it contains.

Arsenic is useful in many forms of paroxysmal sneezing, but we have found it of little or no value in true hay-fever, where the attacks are excited by pollen. It is indicated when the patient is seized several times a day, usually in the morning soon after rising, with profuse running from the eyes and nose, accompanied by frontal headache. The attacks are excited by exposure to cold, by dust, and other causes, and are usually accompanied, or perhaps preceded, by itching at a small spot situated inside one or both nostrils, not far from the orifice. This complaint, unless actively treated, often persists for years. Arsenic is also useful when the attack is excited by food, and lasts for half an hour or so after the chief meal of the day. In children who after a severe attack of bronchitis catch cold on the slightest provocation, the same method of treatment may be employed, especially when there is much wheezing and embarrassment of breathing. Coryza sometimes precedes the dyspnoea for three or four days, the whole attack lasting a week or more. Sometimes we meet with cases where the patient suffers from asthma for several years, and is then seized with severe attacks of sneezing.

In many cases of sneezing the excitable or susceptible condition of the mucous membrane of the nose is due to the presence of a polypus, or some other similar morbid condition, and then operative procedures afford the best chance of relief. When there is much hypertrophied tissue the electrical cautery, after the application of a strong solution of cocaine or antipyrin as a local anæsthetic, is recommended.

When the attacks are attended with itching or irritation of some particular spot or region, the local application of aconite liniment or aconitia ointment may at once give relief. A lady, aged 22, who was under our care, suffered persistently for some years from sneezing. The fits occurred in the morning, lasted several hours, and were accompanied by considerable pain over the forehead. The sneezing was often so violent as to exhaust her for the greater part of the day. She complained of intense itching, both of the inside and outside of the nose, and also of part of the face, the itching lasting during the whole of the paroxysm of sneezing. Her health had given way, and she was pale and thin. The free application of aconite liniment to the outside of the nose and part of the face, which was the seat of the itching, immediately gave relief, curing both the itching and the sneezing. The attacks of sneezing returned once or twice in a mitigated form,

but a fortnight's persistence in the treatment effected a complete cure.

ABSTRACT OF THE CROONIAN LECTURES ON ANTI-PYRETICS.

Delivered before the Royal College of Physicians, June, 1888.

By DONALD MAC ALISTER, M.A., M.D., F.R.C.P.,
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LECTURE I.

THE lecturer began by explaining that the lectures he proposed to deliver were complementary to the Goulstonian Lectures of last year. In these the treatment of fever had been intentionally passed over. But treatment could not long be absent from the thoughts of a physician, however theoretical the bent of his mind; and when very unexpectedly he was offered another opportunity of addressing the College as Croonian Lecturer, he had proposed, and the President and Censors had approved the choice, to deal with the practical bearing of the theory of fever. The regulations under the new scheme prescribed "lectures on one or more subjects in anatomy, physiology, and pathology, with a view to the prevention, control, and cure of diseases." Though the subject of the lectures was for brevity given as "Antipyretics," he did not propose to limit himself to the drugs so called or their pharmacology. He would discuss rather (1) the light thrown on the nature of fever by the means employed successfully for its treatment, and (2) the lessons in the treatment of fever which flow from a right understanding of its nature.

The outlines of the theory presented last year were recalled. The nervous mechanisms of heat-loss or thermolysis, of heat-production or thermogenesis, of heat-balance or thermotaxis, constituted the thermal nervous system, and these mechanisms were in ascending order of complexity and of evolution. Fever was a dissolution beginning with thermotaxis and extending to the inhibitory mechanism of thermogenesis. Hyperpyrexia was a still deeper dissolution, and extended to thermolysis. Much still remained to render complete our knowledge of the anatomy and physiology of these several mechanisms, but contributions were constantly being made and obscurities cleared away. As he was anxious to strengthen in their minds the conviction of the objective reality of the thermal system, he would first call attention to certain recently-acquired anatomical and physiological facts which had not yet received sufficient notice.

First, as to the physiology of thermolysis.

The Harveian Orator, Dr. Stone, had pressed on the College the importance of physical investigations in medicine, and regretted that they were at present less regarded than researches in histology or bacteriology. A series of valuable experiments, involving high skill in physics and in mathematics, and therefore perhaps overlooked, had been made on the radiating power of the skin, by Dr. Masje, under Professor Eichhorst, of Zürich. Probably, sixty per cent. of the heat leaving the body did so by radiation. But the laws of this loss had not been inquired into, or had been assumed to be governed by physical analogies. At the Zürich Hospital, by the aid of an instrument of great delicacy and precision, on the principle of Langley's holometer, the true laws of skin-radiation had been worked out, and had proved to be strikingly suggestive.

A hot body radiates less as its temperature falls. This was the physical law, but not the physiological. A part of the skin suddenly uncovered naturally became cooler, but its radiation increased steadily as the temperature fell, until a certain limit was reached. Radiation was more intense in men than in women, in boys than in girls, in young persons than in old, in the vigorously healthy than in the feeble or convalescent. In other words, radiation was more active as the processes of nutrition and metabolism were more active.

Reasons were given for believing that the radiating power of the skin, which would be shown to depend on its physical and chemical constitution, was subject to nervous control; and thus, what was apparently the most purely physical of all the thermolytic processes was not outside the domain of the thermal nervous system. In discussing the value of an antipyretic method, in ex-