

hands of those who know how to use them. In the present instance, neither antimony, ipecacuanha, nor apomorphine should be employed, because they excite too much bronchial secretion, and hence when they do act they give but the most evanescent relief. Often also they fail to act as emetics at all, whereupon their effect is bad, for nothing is so calculated to fill the tubules with liquid as a prolonged nausea. Instead of these emetics we would recommend, first, the turpeth mineral, or yellow sulphate of mercury, in doses of two to five grains; or, second, the sulphate of copper, half a grain; or, third, the sulphate of zinc, in a dose of five grains combined with the same amount of powdered alum, in a tablespoonful of water. None of these emetics operates except in the one way of irritating the nervous association with the gastric nerves to expel a gastric irritant. The heart is not depressed by them, nor the bronchial mucous membrane rendered cedematous; and moreover, if emesis does not follow very speedily after their administration, they do not act at all, and may safely be left alone, as far as the bronchial membrane is concerned, if a second dose has not been followed in ten minutes by vomiting. The case, then, is not one in which emesis should receive further trial, at least for another twelve hours. A more frequent administration of emetics than once in twelve hours is useless.

When the struggle for breath once begins in deadly earnest, the indications change to the two purposes of supplying oxygen and of sustaining the patient in the dread struggle. Why should the necessary restlessness of the patient be now smothered by opium?

It is difficult to see any reason for the employment of this drug, from first to last, in this critical disease, other than that of securing the deceptive quiet which this most effective paralyzer of respiration may occasion in bronchitis preparatory to a quiet forever permanent. A much better relief to the distress and cough is afforded by a mixture of chloral and camphor, to which a very small quantity of an opiate is added, as in the following: \mathcal{R} Chloral, \mathfrak{z} i.; Magend. sol. of morphia, \mathfrak{v} x.; syr. simpl., \mathfrak{z} ss.; aq. camphoræ, ad \mathfrak{z} iij. M. Sig.: Teaspoonful in sweetened milk. In the mean time, if pure oxygen gas can be procured for inhalation, we can speak very favorably of its aid in battling for life in these cases, both by assisting the breathing and by strengthening the heart. On this account, the air of the room in the immediate neighborhood of the patient should be constantly renewed, while at the same time any chilliness noticeable in it should be counteracted by artificial heat, tempered with steam. Inhalations of steam vapor are not called for, if laryngitis is absent, inasmuch as the necessary measures for steaming may interfere with the free supply of oxygen.

The indications to sustain the patient's powers now call for the most fearless use of alcoholic stimulants. Of all such preparations brandy does best for children, and may be given to them with or without milk, generally best in some hot liquid; in the suffocative stage of bronchitis it may be given continuously in doses of one, two, three, or even four drachms every hour. It will be noted, now, that cardiac stimulants are of the most service, and hence external irritants will often greatly aid the other measures adopted. While an external covering is of great value in the first onset, and then the more soothing its effect the better, exciting ones are the effective means at the last. We would recommend, therefore, a jacket of wadding for the chest, covered with oiled silk, during the early stage of the complaint, to be followed later on by baths in hot mustard water. The latter should be taken once in six hours, and should be continued each time until the skin is reddened; and occasionally a cloth wrung out of a hot infusion of capsicum, \mathfrak{z} i. to the pint, should be applied to the chest for from five to ten minutes, and then the wadding jacket should be put on again as before. Another good point in practice is to give an infant who is struggling for breath something hot to swallow every few minutes. Half a teaspoonful of hot milk and lime water, or some such excitant of the act of deglutition, powerfully helps expectoration, as I have had frequent

occasion to note, as well as relaxes bronchial spasm. Kroenecker found that every act of deglutition acts as a cardiac stimulant, and raises the blood pressure.

Many of the favorite remedies employed by different writers in the treatment of broncho-pneumonia can be mentioned only briefly, because, having tried them, we are too uncertain of their beneficial effects to prescribe them hereafter in cases of our own. First, ammonia, as a cardiac stimulant and expectorant, is largely employed, and in older children may be beneficial, as it certainly is in the pneumonia of adults. The difficulty with it in little patients is the irritation which its administration, however disguised, causes in them compared with adults, for it excites both coughing and crying. Quinine is given in pulmonary inflammations with the same regularity at present as blood-letting was resorted to half a century ago, and with no better reason. Aconite is a far more certain antipyretic than quinine in this complaint; while the depression produced by quinine upon the heart in children is decidedly more permanent than that of aconite, and at the same time there are no compensations to warrant its administration.

3. CHRONIC BRONCHITIS.—This common disease, unlike the preceding, is usually a complaint of middle or of declining life, and fully illustrates in its course the inveteracy and proneness to relapse of all chronic disorders of mucous membranes. Although the structural changes which chronic bronchitis induces may become very extensive and may involve secondarily the most distant parts of the body, producing changes in the abdominal viscera and in the entire circulatory system, yet it always remains essentially a local and not a constitutional disease. This is a matter of practical importance to the physician, and is well shown by a comparison between chronic bronchitis and pulmonary phthisis, the disease with which it is most apt to be confounded, on account of the most prominent symptoms of each being cough and profuse expectoration. Thus, a significant difference meets us at the outset in the personal appearance of patients, even in the advanced stages of these two complaints, and one which indicates a difference of both nature and origin. Phthisis from the beginning is a wasting constitutional disease, frequently manifesting a loss of bulk in every structure which is related in any way to the function of respiration, before any respiratory changes can be detected, except perhaps quickened breathing. The early contraction or want of action of the lung apices produces a characteristic elongation of the neck from sinking down of the clavicles, which causes the patient to carry his chin forward beyond the line of the chest and abdomen. The muscles of the neck also appear thin and ribbon-like, although the imperfect respiration causes these auxiliary muscles to stand out more plainly under the skin in forced inspiration than they do in health. Following upon this change in the neck, there is a peculiar retraction of the cheek toward the angle of the jaw, while the early emaciation appears in the pinched features, the sharply defined nostrils and ears, and the too clear conjunctiva, which shows the sclerotic through it like a polished glass ball. The hands, which in all cases show emaciation better than the face, look bony, and have a bird-claw contour, from wasting of both dorsal and palmar muscles; while the bones generally, like the muscles, have a tendency to be narrow and thin. The skin of the consumptive is of silky smoothness, with long blue veins, and, except at the onset of the daily fever, is moist as well as soft. In contrast to all these characters, a case of severe bronchitis presents us with a round and much distended chest in the very region where it is flattened or sunk in phthisis. The clavicles, therefore, are elevated instead of depressed, and the neck is directly shortened. The chin, instead of being carried forward, is drawn back, and the neck muscles are large, broad, and massive, being much hypertrophied by the labor which they are called upon to undergo in lifting the chest, because in chronic bronchitis the vertical movement of the chest walls is increased in proportion as the lateral and the antero-posterior movements are decreased. Chronic bronchitis, moreover, being a non-

febrile disease, does not cause atrophy of the muscles, and hence the powerful array which may be seen under the skin of the neck whenever coughing begins. Owing to the same cause, the supraclavicular depression, which is nearly obliterated in phthisis, is much deepened in bronchitis, in some instances sufficiently so to admit of several fingers being laid in the cavity; and if emphysema also be present, quite notable tumors rise from the bottom of the depression during coughing, which are caused by the distended subclavian and innominate veins. The face is turgid, the complexion is often suffused, the nose and ears are thickened, the conjunctiva has an edematous appearance and is traversed by tortuous veins, while the skin, particularly if emphysema and consecutive chronic hepatic congestion be present, is dry and leathery, and can be drawn into wide, non-elastic folds. Everywhere under this thickened skin the veins appear enlarged, tortuous, and dark-colored.

Symptomatology.—The most common history of a chronic bronchitis is that the patient was at first subject to frequent attacks of acute bronchitis, especially in the last weeks of winter or in a belated spring. His cough, he tells us, hung on by his taking a fresh cold every time he went out or the weather changed; and he tells his story correctly, because he had reached that state of susceptibility to relapse on slight provocations which is the penalty of leaving an inflammation of a mucous membrane only partially healed. Just as an old gleet will return after some trifling error of diet, so does a bronchitis revisit its victims upon the slightest chill or exposure to a draught of air. So soon, however, as milder weather comes, when the skin is kept in a state of gentle perspiration, the bronchitis is displaced and the cough ceases until the chilly season comes round again, when the same experience is repeated, with an increase, each year, of the severity or the duration, or both, of the bronchitic attacks. After an indefinite length of time, according to the individual case, the cough becomes permanent, and merely decreases in severity during the favorable season. But meantime it is worthy of note that not until long after the bronchitis has become continuous, so to speak, does the patient's general health seem to suffer materially; for, in great contrast with a true consumptive after the same lapse of time, he loses but little in flesh or color, and in summer often seems quite well. Prolonged cough, however, at last begins to tell, and the first sign of injury is usually breathlessness upon muscular exertion. This is mainly due at first to weakening of the air vesicles by overstrain, and may be entirely recovered from. Another complication is soon added, which in some individuals comes on much earlier, namely, asthmatic breathing, for it rarely parts company with it thereafter, and meantime greatly increases the textural mischief wrought by the primary disease. In time dyspnoea becomes habitual, whether the patient has been coughing or not, and ere long signs of embarrassment of the pulmonary circulation develop from weakness of the right ventricle, the far-reaching results of which are now to be detailed.

The cough of chronic bronchitis is varied in character according to the quantity and quality of the secretions expectorated. One kind has been graphically termed "dry" catarrh, from the small amount but great viscosity of the discharge. This secretion can scarcely be propelled along the bronchial walls, and when it reaches the bifurcation of the trachea the most violent and rapid paroxysms of coughing commence, in which reflex laryngeal spasm participates, causing the sound to become like a whistling squeak. The patient has to use every expiratory muscle to the utmost, and doubles himself up with the effort, while his face grows purple and his eyes and nostrils water, until the tenacious streak of mucus is finally dislodged with much gagging or even vomiting. This severe coughing naturally produces injury of the small bronchi and of the air vesicles from mere mechanical violence, so that emphysema is more likely to occur in this than in any other form of bronchitis.

The other and more common form is that in which the secretion is abundant and liquid. The amount and consistency of this, however, vary greatly. Some are able to get rid of the most of it at one fit of coughing, and then remain measurably free for hours; others have a steady flux, which rarely allows them any prolonged intermission in their efforts at expectoration. This bronchorrhœa is apt to be particularly harassing at night, and is the torment of many old persons, who can rarely lie down at midnight. In the majority of cases this condition is dependent upon cardiac weakness, and hence, even in the best summer weather, when the cough is much mitigated although still moist, râles will be found to prevail at the bases of both lungs posteriorly.

The character of the expectoration of these patients varies also in other respects. In some the watery flow is markedly predominant, and, when expectorated into a vessel containing water, the muco-pus floats in irregular masses on the surface, owing to the air which is entangled in its meshes. In others pus itself is raised in great quantities and in rounded masses. In still other cases, however, which are usually of long standing, the expectoration is very liquid in parts, and of a brownish tinge ("prune juice"), with masses of fetid, purulent, and rather adhesive secretion which sinks to the bottom of the cup. This factor has been interpreted as a sign of prolonged retention in some cavity on the way, and therefore an evidence of sacculated enlargement of the bronchi. While this is doubtless true of most cases, yet it is not so of all, and the fetid secretion may then be caused by some special putrefactive ferment in the bronchial wall itself. This is rendered possible by the curious fact that the fetor is so much greater in many instances than is found in the largest phthisical vomice, and, moreover, is so much less easy to disinfect. It is sometimes difficult to distinguish it from the odor of gangrene of the lungs, and the diagnosis has to be based upon the different antecedent history and subsequent course. The breath also often remains offensive after the expectoration has chiefly lost its odor; at other times, the fetor comes and goes without any assignable reason. Neither is it necessarily a dangerous complication, for the worst case, as regards odor, that I have ever seen was in a young man who had it for several years, while his general appearance continued extremely good.

Acute Broncho-Pneumonia Supervening upon Chronic Bronchitis.—Chronic bronchitis may terminate rather suddenly by the supervention of an acute diffuse bronchitis with consecutive pneumonia. There is reason to fear an access of this kind if a patient, who has suffered from this complaint for a long time, begins to feel chilly and feverish. A development of fever in a comparatively non-febrile complaint like this is always of serious significance, as it is in the bronchitis of children. The cough becomes much more severe and exhausting, and the implication of the smaller bronchi is rendered probable by the characteristic appearance in the sputa of long threads of mucus hanging down from the larger masses as they float in the more liquid portion. These mucus-strings are derived from the smaller bronchi, which they nearly occlude until expelled by great effort, and, if the patient's strength fails, the symptoms rapidly assume a grave constitutional character. The cough grows more and more ineffectual, the fever increases, and a low delirium sets in, with much subsultus tendinum, a dry tongue, and often free sweating. It is an unfavorable sign when the patient no longer attempts to sit up, or to turn on his side, or when the cough ceases. Physical exploration shows the ordinary signs of broncho-pneumonia, and while the prognosis is always serious, it is worst when among the antecedents there has been a weak, dilated heart, emphysema, bronchiectasis, or old age.

PATHOLOGICAL ANATOMY.—There is no disease the general course of which is better explained by its morbid anatomy than chronic bronchitis. The changes that are found after death are so manifestly explanatory of the ante-mortem history that both the symptoms and the sequelæ of chronic bronchitis are best understood by keep-

ing in mind the organic alterations which produce them. After chronic bronchitis, there is usually found considerable discoloration of the lining mucous membrane of the bronchi, either brownish and generally diffused, especially if the case has been complicated by cardiac disorder, or else in scattered red points, which increase to patches about the bifurcation of each bronchus. Of greater significance, however, than these vascular signs is the hypertrophy of the mucous membrane itself, which shows also a very irregular surface from still greater thickening of the subjacent longitudinal elastic fibres and hypertrophy of the muscular coat. Like all hypertrophied unstriped muscular fibre, the muscles are frequently found in a state of fatty degeneration, and evidently possess but little of their normal contractile power. This is especially the case in the sodden tissues found in bronchorrhœa. The bronchi themselves appear to be passively dilated, and on section of the lung multitudes of the tubules are found to resemble the primary divisions in calibre, until further examination shows that they spring from smaller bronchi than themselves. The secretion found differs according to the form of the disease in life, being highly purulent and tenacious in the so-called dry catarrh, and filling all the smaller divisions with watery mucus in those characterized by more flux. It is, however, as we proceed further into the adjoining tissues that the most instructive lesions are found. Emphysema, as might be expected, is always present to a lesser or greater extent, sometimes occupying mainly the edges of the lung, at other times spreading out in every direction, interspersed with bands of fibrous tissue which strikingly assimilate the appearance of the viscous to that of a case of fibroid phthisis. The recent demonstration, however, of the specific nature of tuberculosis and its dependence upon a parasitic organism, renders it as incorrect to speak of a bronchitis turning into phthisis as of a urethritis changing into syphilis; while, of course, it is not denied that a peribronchial inflammation, due originally to a chronic bronchitis, may afford a good nidus for the reception and development of the phthisical virus. The common accompaniment of fibroid thickening from any cause, namely, the development of bronchiectatic cavities, leads to a still further resemblance to phthisis, and one which in some cases makes it difficult to settle the diagnosis without a full history of the beginning and course of the disease.

Besides the production of emphysema, one of the common results of chronic bronchitis is a slow implication of the surrounding connective tissue, which, as we have seen in capillary bronchitis, occurs with great rapidity. Peribronchitis is distinguished by a tendency to pass from lobule to lobule outward, until it involves the pleura and produces thickening of that membrane. This effect has been ascribed by some to an extension of the inflammatory changes along the nutrient channels, which belong to the bronchial arterial system, rather than to those of the pulmonary vessels. One result is a great fettering of the expansion of the lungs in this complaint, so that on inspection of old cases we often find the lower ribs contracted, and either wholly immovable or else falling in with each inspiration, the only well-marked thoracic movement being vertical, and carried on mainly by the neck and shoulder muscles.

The results of such changes upon the circulation now remain to be briefly considered. It is inevitable that the right ventricle should sooner or later become enlarged and dilated by the prolonged obstruction caused by the disease in the pulmonary circulation. Universal venous congestion, therefore, is a common result of a bronchitis which has lasted long enough to embarrass the outflow into the lungs. Brown induration of the liver, with gastro-intestinal derangement, follows. The marasmus of chronic hepatic disease shows itself over the body in the dry, thickened, and wrinkled skin, in general arterial rigidity and muscular atrophy, and in a tendency to interstitial increase of connective tissue throughout all the organs. Hence old bronchitic cases, instead of resembling the soft, white, emaciated forms of the phthisical,

much oftener look like the withered and dusky sufferers from cirrhosis of the liver. The portal congestion induced by the hepatic obstruction produces gastric catarrh, constipation, and hemorrhoids, and later the kidneys partake in the venous stasis, so that the urine becomes scanty and high-colored. As the return current of blood becomes more and more impeded, ascending œdema from the feet develops on to general anasarca, in the usual fashion characteristic of cardiac dropsies.

Etiology.—The causation of chronic bronchitis is dependent, in the majority of cases, upon recurrent acute attacks, as just described. The original proclivity to such attacks, however, undoubtedly varies in nature in different cases. Some persons seem to have a hereditary diathetic tendency to bronchial catarrh, beginning generally with a chronic sensitiveness of the pharynx. These cases are characterized by imperfect circulation of the feet. There are a number of individuals, however, who are prone to chronic hyperæmia of all mucous membranes, which shows itself in swollen and reddened eyelids, and in chronic nasal, pharyngeal, or aural inflammations; they also have disorders of the abdominal viscera, accompanied by sediments in the urine, etc., all of which ailments seem connected with some irritant in the blood from malassimilation; and when persons of this class contract a bronchitis they seem never to get rid of it. That the gouty diathesis disposes to chronic bronchitis is well known, but so also do all sclerosing disorders, such as chronic alcoholism, with or without cirrhotic changes in liver or kidneys, and particularly when arterial degeneration is added. Lastly, mitral valvular disease leads to bronchial stasis and flux, the more so on account of the peculiarity of the bronchial arteries which communicate freely not only with the general systemic veins, but also with the pulmonary veins—vessels, therefore, which lie in the direct track of a mitral obstruction.

Diagnosis.—The diagnosis of chronic bronchitis is difficult only when the discrimination has to be made between it and fibroid phthisis or chronic pleurisy. The points in which it differs from phthisis have already been reviewed. Fibroid changes in the lung, however consecutive to chronic pleuritic adhesions, are very analogous to those in many cases of chronic bronchitis; but the initial history of the former is very different, as it begins with pleuritic pains and continues frequently to repeat this symptom to the last. Similar pains also characterize the course of fibroid phthisis to a much greater degree than they do bronchitis. Physical exploration of the chest is not very satisfactory in chronic bronchitis, from the too great number of signs. Aside from a few cases with pleuritic adhesions, the sounds obtained by percussion are usually not much altered from the normal except in the direction of increased resonance. Auscultation, however, meets with nearly every sound which can be generated in the chest. When we reflect that in a well-marked old case we may have a much greater than the usual number of large tubes, filled in varying degree with various kinds of secretions, in close proximity to asthmatically narrowed bronchi, and these again near cavities as large as ordinary vomice, surrounded by fibroid bands, emphysematous lobules, and lastly, pleuritic thickenings, we should not be surprised if we meet simultaneously noises belonging to each of these conditions, interspersed with certain areas in which we would find diminution or absence of all sound, whether normal or adventitious. This is the case to such an extent that a differential diagnosis, based upon physical signs alone, is not to be trusted.

Treatment.—One of the first indications in the treatment of any chronic discharge from a mucous membrane is to disinfect it, for experience proves that in so doing we remove a leading cause of the inveteracy of the complaint, viz., local irritation of the membrane by its own perverted secretion. It has been pithily said that it is no business of a mucous membrane to secrete mucus, but rather only an aqueous, slightly saline fluid, with but a trace of mucus to diffuse it equally over the surface. The presence of a layer of mucus, therefore, is a sure sign of

something wrong, and we may add that the longer that layer is allowed to remain, the more it acts as an irritant by its fermentative operation upon the subjacent membrane. In practice, there can be no doubt that the sooner mucus is removed, the sooner will an inflamed membrane recover, as we see illustrated by washing the bladder in cystitis. But washing is only a mode of disinfection, and hence illustrates the same general principle. In the alimentary canal, the natural gastro-intestinal secretions are each strongly antiseptic, and therefore the presence of a gastric or of an intestinal catarrh is evidence of the absence of those preservative, as well as digestive, juices. The best remedy for catarrhs of that mucous membrane, therefore, is the restoration of those secretions. On the other hand, where those secretions cannot reach, as in chronic dysentery, I have repeatedly succeeded in arresting, without any internal medication, the mucopurulent discharge from old rectal ulcers simply by ordering the rectum to be thoroughly washed out after each passage by an enema of hot water, made disinfected by the addition of twenty drops of the oil of peppermint.

I refer thus generally to the subject only to emphasize the more that prime indication in managing so intractable a disorder as chronic bronchitis, for next to the lesser exposure of the skin to chill, it is plain that the mitigation of a bronchitis during the summer season is owing to the fact that the patients are at that time able to inhale the open air so much more continuously than when they are jealously housed in winter. The open air is "bland," not because it contains some soothing ingredient characteristic of a given locality, but simply because the oxygen which it contains is the natural disinfectant for the respiratory passages. The best, indeed the only curative prescription for a settled case of chronic bronchitis, is a place where the patient may spend two or more years in continuous outdoor life, preferably in a tent, and sleeping in a hammock, because all catarrh will cease when the air tubes have become thoroughly disinfected. The choice of climate, therefore, is not to be regulated by its heat or its moisture, or the reverse, but rather by the number of days in which it is comfortable to remain outdoors with out exposure to chill.

Another prime indication subserved by open-air life is the toning-up of the weakened bronchial muscles and of the heart. Throughout the whole animal kingdom, the muscular power is directly proportioned to the activity of the respiration, that is, to the amount of oxygen taken into the system. It is the wonderful breathing capacity of insects which explains their wonderful muscular energy, and so soon as muscular tissue begins to weaken, or is prone to fatty degeneration, the greater is the need to afford it the freest supply of oxygen. This principle, therefore, illustrates the clinical fact that one of the most efficacious remedies in chronic bronchitis, and especially in the bronchorrhœa of the aged who have enfeebled hearts, is iron. As the only rôle of iron in the system is to carry oxygen, so I have been accustomed to prescribe the tincture of the chloride of iron, with excess of hydrochloric acid, in every case of heart disease and of chronic bronchitis, as a prophylactic against dilatation or muscle failure, with the result of greatly diminishing the expectation in the bronchial trouble and enabling the patients to sleep much more continuously at night. In distinction from its effects in phthisis, iron is always well borne in chronic bronchitis, partly, no doubt, from the more febrile character of the former disease. As adjuncts to iron, we may recommend the ethers, such as the compound spirit of ether, the spirit of nitrous ether, dulc., and, in cases in which there is cardiac complication, digitalis.

A certain class of remedies may also be chosen for their antiseptic powers, such as the balsams and terebinthines like copaiba, buchu, tolu, etc. The objection to them, however, is that they are apt to disorder the stomach, and hence can be employed advantageously only now and then, especially in some exacerbation of the chronic disease with pain and increased coughing. Carbolic acid

itself, made up into pills and taken in doses of about twelve grains a day, is more effective and better borne. A drink composed of twelve grains of carbolic acid, half an ounce of glycerin, and half an ounce of paregoric in a pint of water, to be taken through the day, is a frequent prescription when the cough is severe and the expectoration at all offensive. One of the best remedies of this class is the carbonate of creosote or creosotal, on account of its agreeing so well with the stomach, as it often improves the appetite and digestion. An emulsion of it can be made readily with a small quantity of glycerin so that a tablespoonful will contain twenty grains of creosotal, the ordinary dose, to be taken three or four times a day. On the same principle we would recommend the daily use of inhalations of carbolic steam, described in the article on *Asthma*. The use of quinine, also, as an antiseptic, in moderate daily dose, however, is to be recommended on general principles, particularly when there is free secretion of pus. The nitric acid, in combination with the iodide of potassium, is sometimes of great service in profuse expectoration, especially when there is reason to diagnose the presence of sacculated bronchial cavities. In some of these cases the oxide of zinc, with belladonna, has seemed to diminish secretion, as it does in phthisical cavities with profuse expectoration.

In those cases in which the expectoration is very viscid, and the cough correspondingly severe, I have found no remedy equal to the emulsion of linseed oil, already referred to. It soon renders the sputa less tenacious, and similarly lessens the violent coughing, while it seems to promote a restoration to a more healthy circulation by lessening the congestive tumefaction through the specific action of oils on such conditions in mucous membranes. The aid of chloral and morphine is also valuable here in checking the irritability of the bronchial nerves. In this class of cases a good deal of benefit may be derived from a prolonged course of mineral waters; those containing the largest proportion of common salt are to be preferred. Such a course is also to be recommended in those cases, above described, of lithæmic or of gouty tendencies, and in the bronchitis of chronic alcoholism. If there be much asthmatic wheezing, the administration of iodide of potassium with belladonna, and occasionally a course of arsenic, will prove of service. In all cases of difficult expectoration, it is well to remember the help which may be obtained from sipping hot drinks. A cup of hot coffee taken thus, before rising in the morning, may enable a patient to rid himself of an accumulation of mucus which otherwise would be voided only by repeated and exhausting efforts.

The importance of protecting the skin of persons affected with bronchitis, in such a climate as ours, cannot be overrated. They should be dressed in buckskin underwear from head to foot throughout the whole autumn, winter, and spring months. The suit should be worn over a light flannel, which may be changed to thicker material in midwinter. All chest protectors should be discarded because they are altogether inadequate for a condition in which a chill to any part of the surface, and especially to the feet is quite enough to set up a fresh access of inflammation. When such exacerbations occur, one of the best measures is to resort to free diaphoresis by the hot-water and blanket pack. The patient should go to bed and undergo this thoroughly, three or more times a day, and by so doing he may effectually cut short a severe visitation of his enemy. During the summer, it is very desirable that the patient take daily cold salt-water sponge-baths, followed by active friction. This measure certainly lessens the tendency to catching cold, and the same may be said of the use of oil unguents for the whole body, to be practised every morning in the winter, with the precaution of exposing the body only in a warm room.

The treatment of acute diffuse bronchitis, supervening upon the chronic form of the disease, belongs more properly to the subject of broncho-pneumonia.

William H. Thomson.