Taking cold / by Francke H. Bosworth.

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to treat the subject in as practical a manner as possible, and whereas this little monograph is intended, as I understand it, for the profession, I have endeavored to adapt it for the laity as well. The subject, I think, is a much larger one than it is generally considered to be, and hence, in the effort to condense it within the scope of the series of publications in which it appears, I have been compelled to pass over many points which seem worthy of consideration, while others have been treated briefly and somewhat hurriedly. That part of the subject, however, which I deem of the greatest importance, viz., the manner in which we take cold and the proper method of preventing it in the wise regulation of our habits of life, especially with reference to bathing and clothing the body, I have treated at such length as will, I hope, clearly convey the ideas which it has been my endeavor to advocate.

F. H. B.

26 West Forty-sixth street, New York city.

TAKING COLD.

HOW WE TAKE COLD.

While as a matter of personal experience taking cold is quite familiar to most of us, if we were to ask ourselves why we take cold, and just how we take cold, we might find it by no means an easy question to answer. In the minds of most people the word "cold" is naturally associated with low temperature, and they confuse the idea of taking cold with that of absolute cold, regarding the penalty which they suffer as the result of an exposure to cold, as due somehow to a direct loss of heat from the body.

Now, this is an entirely erroneous idea. The body is constantly losing heat, radiating it in large quantities sometimes, without in any way suffering therefrom; in fact, the radiation of heat from the body is a constant process and a conservative one. Furthermore, when the demand for heat is very great, as when the thermometer ranges below the freezing-point, the supply is fully equal to the demand. A swimmer will plunge into the water at a temperature of 25° to 30° below that of his body and remain immersed for hours even without suffering, and yet the loss of heat by radiation must necessarily be very great. This loss is thoroughly made up by the rapid heat-production which is going on in the system as the result, in part, of the vigorous exercise which he

is compelled to keep up during his immersion. Again, in the Turkish bath, after spending some time in a hot room at a temperature of from 160° to °190, one plunges directly into a cold bath, not only with impunity but with a sense of refreshment and invigoration. We have here, then, instances wherein the absolute loss of heat from the body is very great indeed, and yet the process is attended with no danger to the general system, in the way of taking cold or other penalty. We must, therefore, look further for some rational explanation of the method by which, and the reason why we take cold.

In order to understand this, it is first necessary to understand what bodily heat is, or, as it is usually termed in works of physiology, animal heat. What is the source of animal heat? As we know, the temperature of the body in health is constantly maintained, at all seasons and at all time, at a temperature of $98\frac{5}{8}°$. Any variation from this standard, be it even very small, constitutes a condition of disease. In former times, many theories were proposed by physiologists to account for this equable and unvarying temperature of the body. As we know, the process of oxidation in chemistry is attended with the development of heat. When physiologists recognized the fact that the blood came oxygenated from the lungs, they conceived the idea that here was the source of heat in the body; in other words, that the lungs acted as a sort of furnace for supplying heat to the whole body in the

process of oxidation of the blood. This theory, however, very soon became untenable when it was discovered that the temperature of the blood in the lungs varied in no appreciable degree from that in the extremities of the body or portions the farthest distant from the lungs. As advances were made in our knowledge of animal chemistry, the fact became known that all the processes of nutrition, viz., the growth and development of the body, really constituted a form of oxygenation, a process attended with the evolution of heat, and that in this process of nutrition of the body, heat production was going on in every organ and tissue of the organism. This, then, is the source of animal heat, and the process is not confined to any one portion or member of the organism, but goes on everywhere, maintaining not only the lungs and the heart and other internal organs at an equable temperature of 98⅝°, but maintaining the limbs, at the furthest extremities even, at this same temperature. Now, clinical experience teaches us, with reference to taking cold, that the penalty of the exposure is incurred not from subjecting the whole body to a lower temperature, but only a portion of it. If, for instance, we sit in a warm room with a draft of air striking the back of the neck, all other portions of the body being protected, or if we venture out on a damp evening in thin slippers, chilling the feet, the immediate result, almost invariably, is a cold. We see, therefore, how this results from exposure of a

part of the body and not of the whole. And, furthermore, this cold which has arisen from chilling the feet or the back of the neck, has resulted in an attack of inflammation of the bronchial tubes, perhaps, or a cold in the head. In other words, an exposure of one portion of the body has resulted in an attack of inflammation in a tract or locality entirely separate and distinct from the one exposed. This needs some explanation. We have seen before how animal heat is generated in all portions of the body, but like all other processes which go on in the human organism, this process of heat-production is governed by the central nervous system, and any disturbance of heat-production in one portion of the body leads to a disarrangement, as it were, of the whole system.

Let us liken, if we may, this central nervous system which governs the whole matter of warming the body, to a chandelier, say, with five gas-jets. If they are all lighted and burning with a steady flame, this constitutes health. Now, if we turn out a portion of them, two or three perhaps, we find that the others flare up with an increased intensity, which we may liken to a diseased condition here. Now, if one of the burners is somewhat weakened, it flames up above the globe of the chandelier in an abnormal jet; this we may liken to the inflammation which is caused by our taking cold.

Or, let us take another illustration. The body is a house; the central nervous system is a furnace in

the cellar which regulates the warming of all the rooms, the registers of which are supposed to be in proper order. Now, from some cause the registers in a portion of the house are closed, the heat from the furnace makes its way into others in a greatly increased volume; and further, if in any one of the rooms the register is broken and the flow of heat is permitted abnormally, it escapes here in a far greater extent than in any other, heating this room in an unnatural way; thus imitating, in a way, the inflammatory condition which results from exposure to cold.

Coming back to the human body. We have used as synonymous terms heat-production, on the one hand, and growth or nutrition on the other, in that they are practically one and the same thing. Now, if the central nervous organization which governs heat-production and nutrition is disturbed or upset in having this process of nutrition shut off, or arrested, in one portion of the body, the back of the neck or the feet in the illustration which we used on a previous page, we can easily see how the central nervous force which governs it, being the same as before, must exercise the same amount of energy as before, and furthermore, that energy must be sent out through some of its channels. Now, if this is arrested in one part it goes out with increased intensity to another. Inflammation, practically, is simply an exaggerated condition of health. In other words, in inflammation the normal processes of health go on, but with greatly in-

creased intensity. And so we see how the draft of air on the back of the head or a chilling the feet, hampering or arresting the processes of nutrition and heat-production in the portion of the body thus exposed, and thereby tending to an increase of the nutritive processes or heat-production in some other portion of the body, may result in an attack of bronchitis or cold in the head.

Another question comes up here which can be only answered by our experience in the matter, and that is, How do we take cold? We do not take cold ordinarily from a draft of cold air,—there must be something else. We do not take cold if the cold air strikes a portion of the body which is not accustomed to be protected. We may face a blast of cold wind from the north at a temperature many degrees below zero with absolute impunity, for, as we have said before, it is not a low temperature that causes a cold. We may sit with our backs oftentimes exposed outdoors to the coldest winds, and suffer no inconvenience. We cannot sit with our back to a draft with the temperature at 40° without incurring great risk of contracting a cold, providing there is sufficient moisture in the air to chill the skin; and this is a practical point in this question which we learn from experience, that the most dangerous draft is one not at a low temperature, but one in the neighborhood of 33° or 45°, and furthermore, one in which the atmosphere is laden with moisture. The fact that a draft of air of the

temperature of zero is not dangerous, is probably accounted for in that the atmosphere at low temperatures can contain but a very small amount of moisture. Experience teaches us, therefore, that the greatest danger is met with in a draft of air of a moderately low temperature and containing moisture: Why this is so it is not easy to explain; the fact remains as a matter of constant and oft-repeated experience. The action of air in motion is to arrest or hamper, for the time being, the nutritive processes which are going on in that portion of the body which is exposed, or, in other words, to arrest those forces or processes in this portion of the body which are generating heat, with the result of developing increased nutrition or increased heat-production in some other portion of the body. This increased heat-production constitutes inflammation.

That low temperature alone is not responsible for colds is still further evidenced by the fact that the winter season, perhaps, is the one in which, of all others, we are least liable to take cold. Certainly of the four seasons, those in which we are most exempt from taking cold are the summer and the wint er months; whereas the time when we are especially liable to take cold is in the moderately cool days of spring and fall, seasons in which the prevailing condition is one of an atmosphere largely charged with moisture, and one also which is specially characteri zed by chillng winds, and in which the temperature r anges at from 35° to 45°.

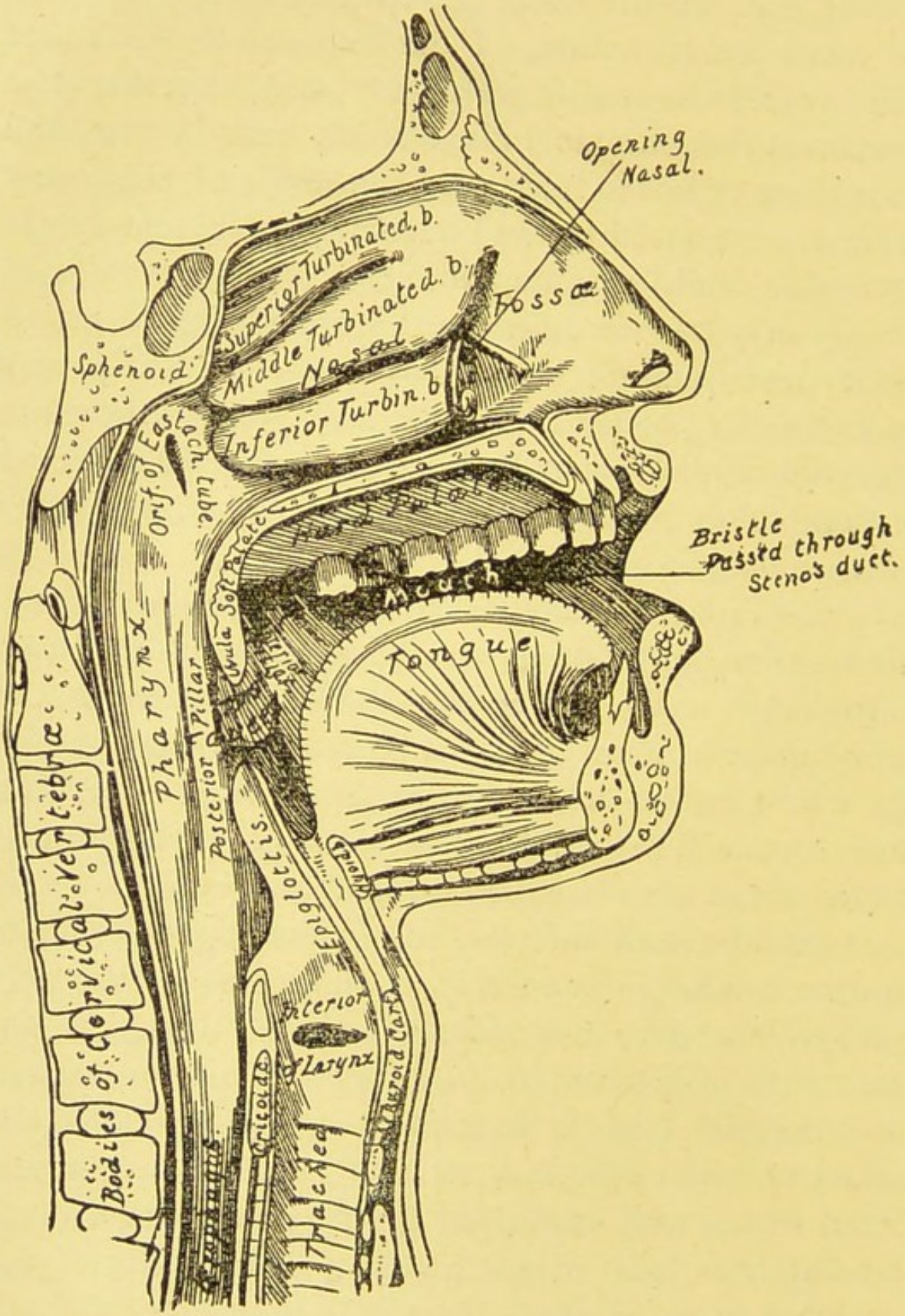
THE PARTS AFFECTED BY TAKING COLD.

Another question which arises here, is as to the location of the inflammatory process which results from taking cold. In the majority of cases, an exposure to cold results in an acute inflammation of the mucous membrane which lines the nasal passages; in other cases it gives rise to a sore throat, or swollen tonsils; in other cases bronchitis, or, again, an attack of irritable bladder, or perhaps lumbago. This is very easily explained, when we say that the inflammation which results from exposure to cold locates itself in the weakest part. If a man is liable to rheumatic troubles, an exposure to cold will result in an attack of rheumatism; if a man has any bronchial weakness, an exposure will be followed by an attack of bronchitis. In most instances, as we know, an exposure to cold gives rise to an acute coryza, or an ordinary cold in the head, simply on account of the fact that the mucous membrane which lines the nose is in a state of mild chronic inflammation in a very large portion of the community in our temperate climates. In other words, most people have mild chronic nasal catarrh, as it is termed, which is perhaps the source of a very slight inconvenience or perhaps may be scarcely noticed at all, and yet when a cold is contracted this chronic inflammation lights up into an active, acute process. It is very commonly said that chronic troubles, such as chronic catarrh, chronic bronchitis, ton-

sillitis, etc., are the result of repeated colds or attacks of acute inflammation. I am disposed to think that the process is really reversed, and that in most instances the chronic inflammation sets in first, and that these repeated colds, as the result of slight exposure, are caused by, and become a prominent symptom of the mild chronic trouble.

It may be interesting in this connection to give a brief description of the anatomy and the physiology of the upper portion of the air passages, for these are the parts which become the seat of attacks of acute inflammation in a very large majority of instances when a cold is contracted.

In the accompanying cut there is shown a sectional view of the nose, mouth, pharynx, trachea and œsophagus. The upper portion of the cut shows the nasal fossa or nasal cavity, a large wedge-shaped cavity which forms the upper portion of the breathing apparatus. There will be noticed on the wall of this cavity three scroll-shaped projections, marked superior, middle and inferior turbinated bones. These projections serve the purpose of increasing the surface over which the mucous membrane lining the nasal cavity is distributed. Below the posterior portion of the nasal fossa is found a large space called the pharynx, and below this the œsophagus, simply a tube lined with a well lubricated mucous membrane. Immediately in front of the pharynx is the cavity of the mouth, separated from the nasal cavity by the hard


Opening Nasal.
Superior Turbinated. b.
Middle Turbinated. b.
Nasal Fossæ
Sphenoid
Inferior Turbin. b
Orif. of Eust. Tube.
Pharynx
Posterior Pillar
Uvula
Soft Palate
Bristle Passed through Steno's duct.
Mouth
Tongue
Epiglottis
Bodies of Cervical Vertebræ
Inferior of Larynx
Thyroid
Cricoid
Thyroid Cart.

palate, and behind that is the soft palate, to the latter being attached the little soft projection, the pendulous uvula. Immediately below the soft palate is a small mass of lymphatic glands called the tonsil. In the floor of the mouth we notice the tongue, immediately behind which is the epiglottis, beneath which we find the larynx and windpipe and entrance to the lungs. These cavities are united in the performance of a number of different functions. The nose is usually regarded as the organ of the sense of smell. This function of the nose, however, is comparatively unimportant compared with other functions which I shall presently allude to. Distributed in the upper portion or the nasal cavity are the terminal filaments of the olfactory nerve. During the act of inspiration minute particles of odorous bodies are carried into the nasal cavity and come in contact with these minute terminations of the olfactory nerve, and their peculiar quality are thus appreciated. The nose also gives certain resonant qualities to the voice which we all recognize, in that when the nose is stopped-up with a cold in the head, a tumor or otherwise, the voice assumes a hard, disagreeable tone, owing to the fact that this resonant function of the nasal cavity is abolished. The nasal character of the voice constitutes that pleasing resonance which we recognize in every good voice. Our English friends accuse us, as a nation, of talking through the nose. The Americans, as a rule, make use of the nasal tones in the voice to a far greater ex-

tent than the English. It is a matter of taste, for we all recognize in the peculiar tones of the voice of Englishmen an absence of the nasal tones, which to American ears is not entirely agreeable.

The three rounded scroll-like projections which we notice on the outer walls of the nasal cavity are called the turbinated bones. Upon these turbinated bones and beneath the mucous membrane are located two large masses of blood-vessels, which are called the turbinated bodies. The function of these masses of blood-vessels is to pour out upon the surface of the mucous membrane a clear watery fluid whose design is to moisten the air that is taken into the lungs. Nature designed the nasal cavities as the entrance to the lungs, and placed there this apparatus in order that every breath of air which is taken into the lungs should be so thoroughly warmed, cleansed and moistened that when it reached the lung tissue it should possess no irritating qualities whatever. These masses of blood-vessels which we have called turbinated bodies, in the course of the twenty-four hours secrete about a pint of water; so that the air in going to the lungs, and passing over the surface of these bodies, takes up this moisture so completely, that when it reaches the bronchial tubes it is in a state of absolute saturation. Otherwise, one can easily perceive that if the ordinary out-door atmosphere reached the bronchial tubes it would dry the membrane which lines them to such an extent as to seriously injure

these passages. Moreover, the lung tissues are exceedingly delicate, and air of the ordinary temperature taken directly into the bronchial tubes would be a source of irritation, unless its temperature were previously raised. Furthermore, any impurities, such as particles of dust, or other matter, which the ingoing current of air in respiration may contain, lodge upon and adhere to the walls of the moist and tortuous passages of the nasal cavity, thus purifying the inspired air before it reaches the lungs. We thus find in the nasal cavity an exceedingly delicate and intricate apparatus which warms moistens and cleanses the inspired air before it enters the lungs. The nose thus becomes really an exceedingly important part of the breathing apparatus, far more so than has usually been supposed, fully justifying my assertion that the nose is of much greater importance as a part of the respiratory apparatus than as the organ of olfaction.

These turbinated bodies, before mentioned, which pour out in the course of the twenty-four hours nearly a pint of fluid into the nasal cavity, must necessarily be regulated with a very great degree of nicety, in order that this secretion of water may adjust itself to the varying degrees of moisture which the air contains. Thus, on some days when the outer air is saturated, these organs have little duty to perform, or, again, when the air is abnormally dry, they are in a state of constant activity. Now, in a state of activity a large amount of blood necessarily circulates through them;

when not called upon for large duty, but little blood circulates. In this way the blood-supply is constantly changing, and thus a condition is created in which disturbances are exceedingly liable to occur, these disturbances constituting a mild chronic catarrh.

In this connection it might be stated that herein lies what has been, even in medical literature, a source of much misconception, I refer to the use of the term chronic catarrh. Now, practically, there is no such disease as chronic catarrh, the name meaning nothing other than a discharge from the nose, and from that it has grown to cover the whole category of diseases which may be met with in the nasal cavity. We should recognize the fact, then, that the term chronic catarrh is a meaningless one, and conveys no idea other than that one has "something the matter with the nose." Furthermore, in a majority of instances, what we call chronic catarrh is merely some disturbance of this intricate apparatus which we have attempted to describe as located in the nose for warming, cleansing and moistening the ingoing current of air in respiration.

Now we can understand how, if as the result of chronic inflammation in the mucous membrane of the nasal chamber, this apparatus becomes hampered in its action or disturbed in some way, and therefore fails to properly prepare the ingoing current of air in respiration so that it shall do no injury, a diseased condition of the mucous membrane below may ensue.

Now, it is a matter of constant observation that a chronic inflammation of the mucous membrane of the nose is very soon fcllowed by a chronic inflammation of the mucous membrane of the larynx, or the windpipe, or the large bronchial tubes, as its direct result; in fact, I am disposed to think that a bronchitis or a laryngitis is an exceedingly rare event except as secondary to and dependent upon a chronic inflammation of the mucous membrane lining the nasal cavity.

If, now, we understand what the function of the membrane lining the nose is, and how very liable this function is to become disturbed or disarranged, I think we have made it clear how a chronic inflammation, mild in character perhaps and giving rise to no appreciable symptoms, is an exceedingly common occurrence in this membrane; in fact, the chronic inflammation of this membrane, perhaps, is met with more frequently than an inflammation in any other portion of the body. Hence, as the point of greatest weakness, an exposure to cold in the large majority of instances results in a cold in the head. Furthermore, each attack of acute inflammation of this membrane leaves the part in a little worse condition than it was before. The chronic inflammation has advanced a little with each attack, thereby rendering it more susceptible to another cold, or, in other words, each cold is contracted more easily than the former one, and thus the habit of taking cold becomes more fixed as the chronic inflammation advances. But, as we have

already tried to make clear, as the result of trouble with the nose, a mild chronic inflammation of the mucous membrane lining the trachea, the larynx and bronchial tubes soon sets in, and with each recurring season the colds in the head become of a severer type and are attended with an attack of hoarseness or a loss of voice, or, if the inflammatory process has extended further down, a bronchitis with cough and expectoration accompanies the cold. As the diseased condition of the upper air-passages progresses, a new feature sets in now, which is somewhat curious, and that is, that the colds, instead of commencing in the head, commence in the parts below. A patient may for years be liable to colds in the head, and finally, as the disease travels down, his cold settles in the bronchial tubes or in the larynx, leaving the nasal-passages clear, and they only become involved later and secondarily. In other words, as the results of cold and exposure, he becomes hoarse, loses his voice, perhaps, commences to cough and expectorate, and after his cold has lasted a few days it seems to travel up into the head, the nose becomes occluded, he sneezes and has watery discharges, and it passes off apparently in this direction, the invasion of the nasal cavity being accompanied with relief to the portions below.

We thus have tried to explain briefly the parts ordinarily affected by a cold and the reason why a cold, apparently by preference, attacks these portions of the body. As regards those colds which attack

the kidneys or bladder, or other portions of the body, there is nothing of special interest to suggest, other than that those who, from inheritance or acquirement, suffer from rheumatism, or cystitis, or kidney disorders, of course are more liable, as the result of exposure, to have a cold settle in these parts where their special and individual weakness may lie.

THE COURSE OF A COLD.

A cold is not really a mere local inflammation, because one rarely contracts a cold without feeling more or less general disturbance. Its onset is rarely marked by a fully developed chill, but usually there are quite well marked chilly sensations, pains in the bones, a feeling of general weakness, loss of appetite, a dull headache, perhaps, and other evidences that the whole system is affected by it. Furthermore, these symptoms usually set in before the local inflammation shows itself. This, I think, unquestionably must be accepted as teaching us that the cold has affected the whole system in some way; or, in other words, as evidence of the correctness of the view advanced in the earlier pages, that an exposure really acts indirectly through the central nervous system in the manner which we have already tried to make clear, primarily arresting heat-productiou in a certain portion of the body, which, being recognized by the central nervous system, creates a disturbance there, in consequence of which an excessive amount of nerve-force is sent out

to the point of the greatest weakness, there setting up inflammatory action, the effect on the nervous system being evidenced by the feeling of general depression, with fever. The constitutional disturbance may last from twelve to twenty-four hours, when the local inflammatory process manifests itself at the point of selection. These symptoms, of course, need not be specifically described. The only point we make in this connection is, the fact of a cold really being a constitutional disturbance as well as a local inflammation.

PREVENTION OF A COLD.

A proper and intelligent understanding of how to avoid taking cold is of far more importance to us than to know how to treat a cold. While, practically, there is no specific method of treating a cold which will prevent the inflammatory process which results therefrom from doing a certain amount of permanent mischief, a knowledge of certain general laws of right living will enable us to avoid the evil results of exposure to cold, certainly in a majority of instances.

These preventive measures consist practically in the proper regulation of the clothing, the maintenance of the skin in its best functional activity by the daily use of the bath, the proper ventilation of our living and sleeping apartments, and certain other more general measures. These, perhaps, would be best discussed in detail.

CLOTHING.

It is an old and popular fallacy that we wear clothes to prevent taking cold. As a matter of fact, we should wear clothes only to protect ourselves from low temperature. For the accomplishment of this purpose, furthermore, it is the height of unwisdom to wear more than just sufficient clothing to protect ourselves from the weather. The instant that we put on more than is sufficient for comfort, we are liable to do mischief. Furthermore, in wearing clothing it should be equably distributed over the whole body. The instant we clothe one portion of the body at the expense of another, or in excess of another, we are liable to do ourselves a harm.

The most important part of our clothing is the underwear, in that, lying next to the skin, it is a matter of no little moment that it should be of such texture as to interfere in the least degree with what is, perhaps, the most important function of the skin, viz., that of perspiration. As before stated, there is more heat generated in the body than is sufficient to keep it at the normal temperature of $98\frac{5}{8}°$. This excess of heat is dissipated by means of perspiration. This perspiration is going on constantly, day and night. It is estimated by physiologists that about 16 oz. of water is dissipated from the surface of the body of an adult in the course of twenty-four hours. This is called insensible perspiration, in that it goes on with-

out the patient being conscious of it, or without it being perceptible. As we know, all evaporation is attended with a loss of heat, which becomes latent. Evaporation and perspiration are practically one and the same thing. Hence, we see that by this insensible perspiration the heat of the body is dissipated. When we undergo violent exercise we generate heat rapidly in the body. This must make its escape rapidly. In this case the perspiration or evaporation of water from the surface of the body becomes excessive, showing itself in the profuse perspiration which occurs during vigorous exercise. It is the insensible perspiration which is of importance to us. The texture of the garment worn next to the skin should be such as will in the least degree interfere with this physiological process. If we examine the fibre of the different fabrics which are worn, viz.: cotton, silk, linen and wool, we will find a very notable and striking difference between the first three of these and the last. The fibre of cotton, silk and linen is an absolutely straight, inelastic fibre. When woven into a textile fabric the result is a somewhat dense, felt-like, impermeable cloth. As the result of this impermeability, when worn next to the skin, it has a tendency to hamper and interfere with this process of insensible perspiration or heat-radiation. If, on the other hand, we examine the wool fibre, we shall find a highly elastic, curling fibre, being absolutely unique and differing from all other fibres in this respect. When woven

into a textile fabric, wool makes a highly elastic and exceedingly porous cloth, which, when worn next to the skin, interferes with this process of insensible perspiration or heat-radiation less than any other known textile fabric. Hence, the underwear should be made of pure wool, as affording a fabric incomparably superior to all others.

A practical illustration of this is very strikingly shown in the fact that one may wear a thin all-wool suit of underwear through a warm summer's day without perspiring, and even undergo a certain amount of physical exercise with the same immunity from unpleasant perspiration. Clothe the same individual with a suit of cotton underwear and subject him to the same physical condition, and in a comparatively short period the cotton underwear will be saturated. The explanation of this is comparatively simple. The perspiration is absolutely unhampered by the woolen underwear; the escape of heat and the escape of moisture goes on rapidly through them. The wool does not take up the moisture of the perspiration and does not become sodden and wet by it. On the other hand, the cotton fabric does not permit this insensible perspiration to pass through it, which is equivalent to saying that the heat of the body is retained by the cotton, and furthermore the moisture of the insensible perspiration lodges in the meshes of the cotton fabric in such a way as that in a comparatively short time it is saturated. It is commonly believed that woolen

wear is much warmer than cotton, and that cotton should be worn in summer for comfort. As a matter of fact the woolen wear is much the cooler of the two, and for the reason above stated. Cotton feels cooler to the touch perhaps than wool, on account of its physical quality. Wool is a poor conductor of heat, while cotton is a good heat-conductor. This physical property of heat-conduction, however, has nothing whatever to do with the regulation of our clothing. Any fabric worn next to the skin for three minutes will be warmed to the body-temperature, and after that occurs heat-conduction ceases to be a factor in the comfort or discomfort of our body wear. Linen is often worn as a matter of comfort on account of its special quality as a heat-conductor. Linen is cooler to the touch than any other fabric, and yet the linen fibre is similar to the cotton fibre. The question is not to provide the body with a good heat-conductor or nonductor; it is to clothe the body with a highly porous fabric which shall not interfere with heat-radiation or perspiration. A silk garment is agreeable to the touch and pleasing to the eye, and yet, I take it, silk would never be worn as underwear were it not the most expensive fabric in the market. It is undoubtedly a source of great satisfaction and pride to many people, but not really, I think, a source of comfort, that their underwear is of raw silk and imported. A knit fabric is always more elastic and more porous than a woven one; hence, I think, knit underwear pos-

sesses an advantage over that from the loom. The underwear in our temperate climates should be just sufficiently heavy to keep the body warm, and no more. I know of no greater mistake than the wearing of very thick underwear as a protection from taking colds. A suit of underwear fitting closely to the skin serves a better purpose in keeping the body warm, than a very much heavier garment thrown loosely over the shoulder. Hence, it is rarely necessary to wear other than the thinner of the knitted material generally used in the manufacture of undersuits.

Few habits are more universal than that of changing one's underwear two, three, or even four times in the course of the year, in order to adapt it to the various changes of temperature in our varying seasons. No greater mistake could possibly be made. One should wear the same thickness of underwear the whole twelve months. I know of no more important direction than this as a protection and preventative from taking cold. Practically, we spend a large portion of the twenty-four hours, both in summer and winter, in about the same temperature. In other words, we keep our houses in winter at a temperature of about 68° to 70°. This does not vary to a very great degree from the average temperature of the summer months. Furthermore, in winter we are accustomed to, and necessarily must, wear heavier outer clothes; these latter affording ample protection from the cold weather of our springs and winters. More-

over, this change of underwear in our climate involves the exercise of an amount of judgment and discretion that none of us possess. One never knows when to make a change from spring to winter wear, and when the change is made, in a majority of instances, the wearer has made a mistake and has put it on too soon or has put it on too late, and suffers either with excessive heat, or a chill, with its resulting mischief. In fact, nothing is more hopeless than to attempt to adapt ourselves to the varying changes of temperature in the very fickle climate of our temperate regions. It cannot be done, and when the attempt is made it is almost invariably a mistake. Our protection is not in adapting our clothing to the various fluctuations of a fickle thermometer, but to so inure ourselves to the changes of temperature that we can meet them with impunity. This we may do by breaking up the habit of wearing too heavy clothing and accustoming ourselves to get on with just sufficient clothing to keep ourselves comfortable. There is much more comfort in wearing little clothing than in wearing too much. The man who always puts on an extra coat for a five or ten degree fall in the barometer, is the man who invariably suffers most from cold weather.

It is important to bear in mind that the warmth and comfort of the body is not so much dependent on the amount and thickness of the clothing, as on a healthy and vigorous cutaneous circulation, for it is by the skin that the feeling of cold is appreciated, and

if the circulation of the blood here is maintained at the normal standard, a low temperature is far less liable to cause discomfort.

Wearing, then, a thin suit of all-wool underwear through the cold of winter and the warmth of summer, we make ourselves comfortable, according to the demands of the outside temperature, by changing our outer garments. This is always an easy thing to do. A change of underwear, however, to meet a rise or fall of temperature in the course of the day, is a duty which most of us would be disposed to shirk.

As regards outer-wear, house-coats and overcoats, that is a matter which is easily regulated. Most of us wear these garments with reference to comfort. In general, the rule must be to clothe the body evenly and equably—not too much in one portion, not too little in another.

Nature has provided the head with an ample covering in the hair. I question if the Almighty ever intended that we should wear hats. Wearing hats is a fashion, and not a comfort or a necessity. It is a fashion which we have indnlged in at the expense of a healthy growth of hair to a large proportion of mankind. Women are rarely affected with bald head, because women's head-covering is an airy trifle. There is no question in my mind that the prevalence of bald heads in our day is the result of wearing heavy felt and silk hats. Anyone who has been much in London cannot fail to have noticed the Blue-coat School

boys, with long, blue surtouts and satchels, noticeable for their ruddy faces and luxuriant growth of hair. Somewhere in the last century, it is said, an epidemic of eczema of the scalp broke out in the school, which necessitated a general order forbidding the wearing of caps or other head-wear. The order has never been rescinded, and to this day the Blue-coat School boys go bareheaded through the streets of London, with the result that nothing about them is more noticeable than the magnificent aud luxurious growth of hair. The conventionalities of life, however, demand that we should wear hats. It is a necessary evil, but can be to an extent mitigated, by making them of as light a material as possible and seeing that the crowns are properly ventilated.

The neck requires no protection except from the severity of a very low temperature. Nothing can be more pernicious than the habit of muffling up the neck. With many people there seems to be an idea that an exposure of the neck results in a sore throat, and therefore to protect oneself from sore throat one must cover up the neck. The skin of the neck has no more connection with the mucous membrane of the throat, than the top of the head with the sole of the foot; in fact, a sore throat is contracted far more frequently from wetting the feet than from cold air on the neck.

The body, in the same way, should be covered equably and with sufficieut clothing to keep it comfortable. This clothing should be equably distributed in front and behind.

Another pernicious habit which is very prevalent is that of wearing extra protection for the chest, putting pads, wads of cotton aud extra covering of that sort over the thorax, with the idea of thus protecting the lungs. One does not take cold on the lungs from an exposure of the chest. The region of body exposed to a draft has nothing whatever to do with the part in which the inflammation results. The habit of coddling one portion of the body at the expense of another invariably results in some weakness. Extra protection for the walls of the chest weakens the whole system; it does not protect and it does not weaken the chest especially; it is only a part of a vicious habit of clothing. The worst possible place to wear a chest-protector is across the chest; the best possible place to wear a chest-protector, probably, is on the soles of the feet. In other words, the chest-protector is a misnomer; it should never under any circumstances be worn. The same may be said of chamois-leather garments worn under the vest. They retain heat and moisture, hamper perspiration, and are in every way objectionable except in extremely cold weather. The limbs should be clothed warmly and comfortably in the same manner as the trunk of the body.

The feet, coming in contact as they do with the cold and oftentimes damp pavement, require more protection perhaps than other parts of the body, but this protection should be on the soles of the feet. A damp, cold pavement is always a menace, while

simply a cold pavement is not. In other words, if we get our feet damp we are liable to take cold, but our limbs may be frozen off without taking cold. This illustrates the point already discussed in a former page, of how we take cold as the result of a damp atmosphere at a moderate temperature rather than in a cold, dry atmosphere. In this way the cold and damp pavement, with thin-soled shoe, is very apt to give one a chill, followed by sore throat, bronchitis, or some other disorder. Hence, the sole of the shoes should be abundantly thick, sufficient to prevent the soles of the feet feeling the cold and dampness through them. The upper portion of the foot does not require the same protection, and should be clothed with reference to comfort. Wearing rubbers, while a necessity, is oftentimes a mischievous necessity. A rubber overshoe that covers the whole foot, contracting it, hampering its motion, retaining moisture and retarding circulation, is always objectionable. In exceedingly cold weather the ordinary arctic shoe sold in the shops affords ample protection from cold. In damp weather, the slight rubber which only covers the sole of the shoe is infinitely better than the rubber shoe which covers the whole foot.

As regards overcoats, there is little need be said, further than to enter a mild protest against the excessive use of furs both for male and female wear which has become such a prevalent fashion. In our climate in late years, a sealskin overcoat or a sealskin dolman

is undoubtedly a beautiful garment, and yet the Lord designed a sealskin for an animal whose principal habitat is in the Arctic Ocean. I do not believe it is in any way adapted for the wear of men and women in temperate zones. Of course, it is better adapted for the loose-fitting dolman than for the tight-fitting sacque; and yet we have not many days in our climate which are sufficiently cold to warrant the wearing of a sealskin, or days in which the wearer is not exceedingly liable to become overheated and thus thrown into a perspiration. As a consequence, immediately upon the removal of the furs, the wearer is liable to feel a sense of chilliness, followed by a more or less well-developed cold.

It is a matter of some importance, after having adopted a system of clothing, to maintain it with a certain degree of consistency. This, perhaps, is not always possible, and yet it is a rule which should be borne in mind.

The requirements of modern society compel the wearing of what is called full dress at evening entertainments. This is always attended with a certain amount of exposure, in that what we call full dress is usually of thinner material than ordinary day-wear, and yet, being worn indoors, the exposure is comparatively limited in the case of men. Full evening dress among women usually involves the exposure of the neck and portion of the chest and shoulders. There can be no question that this is, technically, a violation

of the laws of health, and yet, from a practical point of view, women do not, as a rule, suffer from the wearing of low-necked dresses unless there be some special bronchial or pulmonary weakness which renders them liable to the penalty of even a very slight exposure. There would be no objection to the wearing of low-necked dresses, if ladies dressed habitually in this manner. The exposure lies in the change from the high-necked to the low-necked costume. It would be infinitely better and more sensible if society were less rigorous in the enforcement of this law. As long, however, as ladies are willing to submit to the demands of society, they must assume the risk. I repeat again, then, that as regards this question of clothing, it should be always borne in mind that the object of wearing clothes is simply to protect oneself from the discomfort, or even suffering, which one would experience if exposed to low temperature insufficiently clad, and that in no way does the mere wearing of clothes protect us from taking cold. It is only by the proper regulation and harmonious and equable distribution of our clothes over the body that we protect ourselves from taking cold. By the wearing of excessive clothing we contract a habit which is exceedingly pernicious in its results in that, even in a moderate temperature, we are compelled to wear unnecessarily heavy clothing in order to be comfortable. The result of this is a peculiar susceptibility or liability to take cold on very slight exposure. The deduction

therefore is that, as far as clothing is concerned, we aid ourselves immensely in the avoidance of a cold by so regulating our clothing that we inure ourselves to the wearing of but moderately heavy clothes even in the colder days of winter. Not only am I confident that in this way we are less liable to take cold, but also that we are vastly more comfortable in the end. A person who is only comfortable in winter with thick flannel underwear and heavy topwear, is always shivering in a comparatively slight blast of cold air. On the other hand, one who has inured himself to the wearing of moderately thick under and topwear, will face the coldest blast of midwinter not only without suffering but with a sense of invigoration and exhilaration. I do not say, of course, that these rules are of universal application. We cannot, of course, carry them to this extent in the case of invalids or of young children, or those in advanced life.

As regards the point made on a previous page as to the wearing of woolen underwear, this rule, I think, is of universal application both as regards the character of the wear and the habit of wearing the same thickness in summer and winter. In people in advanced life, however, the heat-prodncing powers are somewhat feeble—the bodily functions are not carried on with the vigor which characterizes middle age or youth. Hence, old people will require warmer and more clothing than young men or women. The same must be said in regard to children, and yet even in

these cases, as far as their years—whether advanced or early—will permit, this hardening process as regards clothing should always be borne in mind and carried out to such an extent as wisdom and discretion permit. With respect to those already enfeebled by disease, of course no general law can be suggested. The regulation of the clothing must be based entirely on the character and extent of the disease from which they suffer.

BATHING.

While I regard the proper regulation of clothing as of great importance in enabling us to avoid taking cold, I am disposed to think that the proper use of the bath in one of its various forms possesses even greater value. I think it a somewhat prevalent impression that the prominent use of the bath is for cleanliness. This I regard as an entirely mistaken view. Human beings are not filthy creatures as a rule, at least to that extent as that a bath every day is absolutely necessary for cleanliness. Furthermore, the daily use of the bath as a cleansing agent is not to be regarded as thereby a promoter of health. We are often told that as the result of a bath the pores of the skin are kept open, and thereby their functions aided aud perhaps stimulated. By the pores of the skin I suppose are meant the sweat glands. These glands have but feeble tendency to become occluded, and even when they do become occluded the result is purely a local one, resulting in a mild form of skin

eruption. So also in regard to the sebaceous follicles by which the skin is lubricated. These perhaps become occluded more frequently than do the sweat glands; the result is merely a localized eruption. Now, whether it be the sweat glands or sebaceous follicles that are occluded it is but a trifling affair, and does not, as a rule, react on the general system. I do not believe, therefore, that the bath has any special effect in keeping these pores, as they are called, open, nor, even if it does do so, do I regard this as a matter which requires any very special attention. Nature herself takes care of this matter practically. This idea of the pores of the skin having anything to do with taking cold is the one which I desire to combat. It is through the sweat glands, of course, that perspiration takes place, and this is regulated by the heat-producing nerve center, probably located in the upper portion of the spinal cord. A cold is contracted, as we have tried to make clear before, by some disturbance of equilibrium in that control of heat-production throughout the body which is exercised by this body-heat center in the medulla. Of course, in exactly the same way, we repudiate the popular idea that the pores of the skin are opened by perspiration and that during perspiration we take cold. The condition of the pores of the skin in this case have probably very little to do with this matter. Cold does not enter through these open pores; in fact, the pores are not open, their calibre being practically

the same at all times. The daily use of a bath, if we regard it as purely for cleansing purposes, is entirely an æsthetic matter. If one goes for several days without a bath, there is a certain accumulation of effete material on the surface of the body which is ill-smelling and offensive. We remove this by the bath because it is offensive, and not because health demands that it be removed. I do not mean to say that there may not be some deleterious effect from allowing this matter to remain in contact with the skin; but, if this is true, it is of a somewhat trivial character. Furthermore, that this effete matter which accumulates on the surface of the skin may to an extent hamper the process of perspiration, whereby the animal heat of the whole body is nicely adjusted and kept at an absolutely fixed standard in health, I do not deny. My main point here is that the effect of this is, to a large extent, over-estimated. I think we attain a far better conception of the true value of the bath in regarding it as a stimulant and invigorant to the whole system. Its primary action is to stimulate the circulation of blood in the skin, and here lies its direct action upon the respiratory function which is not aided by keeping the pores of the skin open, but is notably aided when we aid and stimulate the circulation of blood through the cutaneous tissues, for, of course, perspiration cannot be active unless the blood circulation is active. In other words, the perspiration does not depend in any way upon the permeability of

the sweat glands, but upon the activity of the capillary circulation in the periphery of the bulbous portion of the sweat glands. It also stimulates the circulation throughout the whole body, adding strength and vigor to the entire system. Furthermore, the best action of the bath does not lie in the cleansing qualities of the water so much as in its temperature. In other words, the best action of a bath is obtained in the cold bath. A warm bath at the temperature of the body, I believe to be of no practical value. Many individuals are almost morbid on the subject of cleanliness, and take daily a warm bath and rub the skin with soap and water. This performance simply satisfies morbid scruples, and practically accomplishes little more. To lie in a tub of warm water at the temperature of the body of a cold morning is rather an agreeable sensation, perhaps, and many of us are tempted to indulge in it, but I think it is a rare exception that one does not emerge from it with a sense of feebleness and relaxtion, and perhaps depression, which may continue even for several hours. On the contrary, after a cold bath, the feeling of refreshment and invigoration constitutes a sensation of a totally different character—one's vital powers are stimulated, the circulation is active, there is a sense of warmth and comfort diffused throughout the body with the reaction which follows the cold, and a general tonic effect is produced which remains for hours, perhaps, after the bath has been taken. I am confident, then,

that in the use of the cold bath, we possess a measure of the greatest possible value to us in enabling us to avoid taking cold in our temperate climate, characterized as it is by such marked and great seasonal, and even diurnal, changes in temperature and humidity. Of course, it is not every one that can take a cold bath daily. For those who can, this should be enjoined as a hygienic measure where there is any liability to taking cold or a tendency to catarrhal or bronchial disorders.

Undoubtedly the best method of taking a cold bath is to lie down in a tub of cold water and sponge freely over the head, neck and shoulders from one to three minutes according to circumstances, the temperature of the water being as it comes from the hydrant. This measure should be carried out summer and winter, without reference to season. No law can be laid down applicable to every individual; nor do I think, as a rule, that physicians are competent to give other than general directions. In these matters every individual is a law unto himself. If a cold bath is followed by a feeling of depression with sluggish circulation, chilly sensations, etc.; in other words, if the bath is not followed by prompt reaction characterized by warmth and vigor, it is a pretty clear that a cold bath cannot be endured in this individual case. If, on the other hand, the reaction is prompt on emerging from the bath, the indications are perfectly clear that it does good. Of course, on emerging from the bath one should undergo a vigorous rubbing with a

coarse towel, until the skin is sufficiently dry to throw a robe over the body—the exercise attendant upon this rubbing adding very much to the promptness with which the reaction sets in. A shower bath, I think, differs in no special way from the tub bath, unless perhaps in creating a more notable primary shock. As a rule, I think the tub bath should be preferred. Where the tub bath is inadmissible on account of the failure of a prompt reaction, a cold sponge-bath should be enjoined. This may be taken at night or in the morning, according to choice. As a rule, the use of the bath in the morning after a night's sleep is more invigorating, and proves an agreeable preparation for the day's work. In regard to the warm bath, if one desires to make use of such, its ill effects, of course, may be counteracted by dashing cold water over the body on emerging from it, practically converting it into a cold bath of short duration. Occasionally, where I have wanted to obtain the good effects of a cold bath, in the case of delicate individuals, I have directed them to use the cold sponge above the waist in the morning and below the waist in the evening, and, if necessary, to moderate the temperature of the water from the hydrant by the addition of a little warm water, merely taking the chill from it.

Surf bathing enjoys considerable repute as a healthful measure. Many attribute this, ignorantly I think, to the action of the salt in the sea water, and we find in our drug stores various preparations of salt

on sale and recommended for converting the ordinary water supply into an artificial sea water, and at our seaside resorts sea water is introduced into the hotels through pipes, or is carried up in large vessels, in order to give the guests the benefit of a salt water bath in their chambers. I do not believe that sea water possesses any special virtues for bathing purposes. On the contrary, I think it rather objectionable on account of its saline qualities from a purely æsthetical point of view. In other words, I do not think that sea water is as agreeable to the skin as the ordinary domestic water supply in the house. The real virtue of a surf bath lies perhaps, to no small extent, in the temperature of the water; but its great value lies in the vigorous exercise to which one is subjected who goes into the surf. Except in an unusually quiet sea, one is in a constant state of exercise when in the surf, either to avoid the breakers or to maintain one's equilibrium, the result of which is that the circulation is stimulated to an unusual activity, animal heat is manufactured with greater rapidity and any untoward effect of the cold is obviated. The temperature also, I think, has a notable effect, in that it is a number of degrees lower than the still water of our rivers or bays which are used for bathing purposes during the summer months, and therefore renders the bath more stimulating and invigorating.

The daily use of a cold bath is, of course, not available to all. In old age and in infancy and early

childhood the vigor of the system is, perhaps, not equal to a cold plunge. Still, in these cases I think we should, as far as possible, make use of the beneficial effect of cold water where there is any liability to cold or a tendency toward catarrhal troubles. If the cold plunge is not available, the cold sponge should be used, modifying the temperature of the water of the bath until its use is attended with no unpleasant symptoms, but is used rather with good effect.

The Turkish bath is indulged in not only as a luxury but as a hygienic measure. That it is a luxury I think few who have enjoyed its allurements will question. That it is a hygienic measure, I think is open to serious question. The procedure is to place a patient from ten to thirty minutes in a room whose temperature is from 160° to 185°, or even more, whereby a profuse perspiratian is produced. After this the patient is taken into an outer room, laid on a marble slab and scrubbed with soap and water supposed to be about the temperature of the body, after which he is put under a shower or into a cold plunge until the body becomes thoroughly cooled. There is no objection to a man's spending ten minutes or a half hour even in a room with a temperature of 180°, and yet when we come to look at it seriously, it seems rather an absurd thing to do. The object of this is to open the pores of the skin—to flush the sweat glands, as it were. The next step, however, of placing a patient in this abnormally heated condition

on a marble slab in a room at a temperature of 70°, and scrub him by detail with the water at a temperature of 80°, is something of a risk, for after such a profuse perspiration one is liable to take cold. The whole body being wet, evaporation takes place rapidly, and a little chill is experienced in one portion or another of the surface. The scrubbing process generally lasts about fifteen minutes. A man in perfect health goes through this rubbing and scrubbing with impunity, and he is perhaps the better for it. Unless, however, a man is in robust health, I think the Turkish bath is something of a risk. Certainly to take a Turkish bath in order to break up a cold, is almost unvariably an unwise procedure. The effect of it usually is to aggravate rather than to benefit the cold. While, therefore, not intending to condemn the Turkish bath in all cases, I think we should stop and question the wisdom of its use in each individual instance. It should never be prescribed for the breaking up of a cold, and it should rarely be made use of except by individuals in a fairly vigorous state of health. As a preventive measure to break up the habit of taking cold, I am disposed to think its use is of limited value.

EXERCISE.

It is scarcely necessary to say that all individuals should take a certain amount of exercise every day, for its effect in toning up the whole system and stimulating the various functions of the body into a healthy

state of activity. This may be indoor or outdoor exercise. I have no disposition to enter here upon a discussion of the advantages of gymnastics, whether of the home variety, with dumb-bells and rubber straps, etc., or that in the regular gymnasium, as these have no special direct bearing on the prevention of a cold. A certain amount of outdoor exercise every day, I think, adds very much to the general tone of the body, and aids notably in our endeavors to correct the habit of taking cold. This may be done by walking, horseback riding, or in other forms. The only question for discussion here is that of the kind of weather in which one should go out of doors. This, perhaps, has no special bearing on exercise, and yet I think it is one on which there are many mistaken ideas prevalent. I regard it as a wise and safe rule to take a certain amount of exercise every day, and that this should be done in the open air if possible. The important point, and the one on which I would lay special emphasis here, is that the condition of the outdoor weather should not have a great degree of influence upon us. Many people are accustomed to confine themselves closely to the house when the east wind blows, or when the weather is damp or rainy. This, I think, is unwise. It is a very simple thing to protect oneself from any ill effects that can be experienced from an east wind or from rain. The same also should be said of night air. It is a popular impression that night air is irritating. Night air is the only air there

is to breathe at night, and there is nothing in night air that is in the slightest degree irritating to the air passages. Night air contains a considerable amount of moisture. Now, when the air is moist and in motion, we have conditions favorable for taking cold—a point which has been fully discussed in a previous page. We take cold, therefore, more easily in a damp night air than in a dry mid-day atmosphere; but there is no reason why we should take cold if we understand how we take cold, and therefore how to avoid it. If properly clad and properly protected, therefore, there is no more objection to going out in the night air than in the day time. I emphasize again, therefore, that this popular prejudice against night air is based on a wrong impression. It is not the night air that is injurious or that is irritating to the air passages, but it is the peculiar condition of the air, moisture-laden and of a lower temperature than during the day, which presents conditions under which one may take cold if not wisely fortified against it.

I think it will be understood, from what has been said before, that the measures already discussed in regard to clothing, bathing, etc., constitute methods by which we fortify ourselves against any bad effects of night air. In other words, we get ourselves into such a condition that we go out at night with impunity. Furthermore, one method by which we become susceptible to cold is by remaining indoors whenever the weather is in any degree unfavorable—in other words, by coddling.

The point which we have endeavored to make in regard to clothing is, that it should in no wise hamper the prominent function of the skin, viz., that of regulating the animal heat of the body by means of perspiration. Keeping this in mind, we can easily appreciate why a sealskin, or in fact the skin of any animal, being almost absolutely impervious, furnishes a covering for the human body which is exceedingly liable to be mischievous in this direction. Of course, in certain portions of our country where, during the winter, the temperature ranges in the neighborhood of zero and below, furs become essential, in that when one ventures out of doors during the prevalence of cold weather, the sole object of clothing is to retain animal heat, and no condition exists in which heat-radiation becomes necessary; hence, no function of this character is hampered. In the temperate zones, however, I am confident that the wearing of furs is capable of doing much mischief.

TREATMENT OF A COLD.

Recognizing the fact that an exposure to cold results both in a local inflammatory process and a general systemic condition, our measures of treatment, necessarily, must be directed to both. In many instances, undoubtedly, a cold can be broken up, or aborted, as we call it, at its onset. The period during which this can be accomplished usually is from twenty-four to thirty-six hours after the exposure.

Hence, measures for the accomplishment of this should always be instituted, if opportunity presents, in preference to local measures of treatment.

THE ABORTION OF A COLD.

This procedure practically consists in the use of remedies which act upon the general system. The first effect of a cold, as we have already learned, is in a disturbance of the equilibrium of heat-production throughout the body; this being arrested, as we understand it, in only a portion of the economy. In general, then, our first effort in aborting a cold will be to restore, as far as possible, this animal heat. Perhaps no better method of accomplishing this presents to us than the resort to hot drinks, together with the hot foot-bath; in other words, the use of heat both internally and externally. There probably is no special virtue in any of the usual decoctions of hot tea prescribed, although, as a matter of routine, perhaps, we give chamomile tea as hot as can comfortably be borne, in which, possibly, two or three tablespoonfuls or more of whiskey is added. A far more palatable drink is the hot toddy or hot whiskey punch. The external application of heat is accomplished by the immersion of the feet in hot water, while the body is well covered by blankets. I think the hot foot-bath, in all cases, is preferable to immersing the whole body in a bath, in that there is less liability to chill the skin on emerging from the bath. A

steam bath answers an excellent purpose, although, perhaps, not as good as the small foot-bath. A very convenient method of administering a steam bath is to place a patient in a chair and invest him thoroughly with blankets, extending to the floor, thus covering his whole body. Beneath the chair, a cup of boiling water is placed over a lighted spirit lamp. The steam which escapes is necessarily confined by the blankets thrown over the patient, the result being the inducement, very soon, of a somewhat copious perspiration. The apparent object of the hot drinks and foot-bath are the production of more or less profuse perspiration. This is not really the object to be accomplished, so much as the evidence that it has been accomplished—the real object being the restoration of the equilibrium of heat-production throughont the whole body.

In addition to the diaphoresis, we possess two remedies which, I think, have a notable influence on the general condition which results from taking cold. These are quinine and opium. What the action of these drugs is I do not propose to discuss at length. Probably the quinine acts as a nerve stimulant and tonic, while the opium acts somewhat as a stimulant and sedative, apparently somewhat contradictory effects, although in the end the results are most happy.

In connection, then, with our hot drinks and foot-bath, we administer 10 to 15 grs. of quinine with the physiological dose of opium. This, I think, is

best administered in the form of the Dover's powder, 10 grs. of which should be taken in connection with the quinine. When the diaphoresis has been thoroughly established, the patient should be vigorously rubbed with a warm towel until the skin is not only dry but in a comfortable glow, and then placed in bed. The action of the bath and the opiates tend to produce a quiet sleep. It is not desirable, after retiring to bed, that the diaphoresis should continue, although it is not easy always to avoid it The mistake certainly should not be made, after retiring, of covering the body too heavily with bed-clothing, thus producing additional perspiration. After the diaphoresis which results from the foot-bath has been accomplished, nothing further can be done in this direction, for, as we understand it, the sweating is to be accepted as evidence that the equilibrium of heat-production is restored. Hence, after the body has been rubbed dry, the patient may be allowed to sit up for ten or fifteen minutes, or even longer, until something of a cooling process has taken place; for, as we have repeated so frequently in previous pages, a cold results from the exposure of a portion of the body, and not the whole body. I think it altogether possible that, after a profuse perspiration, one might stand in a state of absolute nudity without contracting a fresh cold, even for a considerable length of time, especially if the body during this time is being vigorously rubbed. After this his covering need be nothing more than is demanded by absolute comfort.

In connection with the above measures, it is always well to administer a laxative. For this purpose I know of nothing better than 10 grs. of calomel or blue mass, to be followed in the morning by a seidlitz powder or a glass of bitter water. It seems to be a somewhat popular idea that one is specially liable to take cold after taking a mercurial laxative. I certainly never have seen any justification for this idea; indeed, for years it has been my practice, not only in the effort to abort a cold but even in the treatment of the later stages of the results of an exposure, to administer a mercurial laxative in preference to any other, its action on the liver seeming to have a very beneficial effect, not only on the general systemic condition which accompanies the cold, but also on the local morbid process which results from it.

If these measures have been inaugurated sufficiently early and properly carried out, the result will be that the patient will waken on the following morning, after a somewhat refreshing sleep, more or less completely relieved of any evidences of the attack. Even if the cold has not been completely aborted, I am confident that the local morbid process, in the majority of instances, will be very markedly ameliorated.

If it is found on the following morning that the remedies have acted favorably, there seems no reason why the patient should not get up and go about his ordinary avocations. The habit of confining a patient

to bed, or to the house, for one or two days or longer, I think is of doubtful benefit, although this is still a very common practice among physicians. Of course, we speak now simply of those colds which develop in an ordinary acute catarrhal inflammation of some portion of the upper air-tract, such as a cold in the head, a pharyngitis or a laryngitis.

While, then, I think we are safe in directing our patients to get up and go about, it is altogether wiser that for at least the following five or six days they should be put under the use of internal medication. For this purpose nothing is better, perhaps, than quinine in 2 or 3-grain doses, administered three times daily. Where quinine is not tolerated, we give from 3 to 10 grs. of salicine three times a day.

I have made the assertion that the abortive treatment of a cold may not be notably successful after thirty-six hours following its onset, and yet, even if measures of treatment are not instituted until even the second day, or later, I think oftentimes very much can be accomplished by carrying out the plan of treatment outlined above, not perhaps with any hope of breaking up the attack, but with the confident expectation of ameliorating the severity of its symptoms in a marked degree. Hence, if the severity of a cold warrants subjecting the patient to such procedure, this should always be done as early as possible.

As regards the use of the Turkish bath for the breaking up of a cold, I have already expressed my-

self somewhat fully on that subject. What was said there, I simply repeat here. It is an exceedingly unwise and somewhat venturesome experiment, and one which probably, in the majority of cases, will result in aggravating the symptoms rather than in alleviating them.

LOCAL TREATMENT OF A COLD.

Failing to abort the cold, or to arrest the development of the local inflammatory process, subsequent measures must be directed toward the treatment of such local lesion as may have resulted from the exposure. Of these, undoubtedly by far the most freqnent is cold in the head. Following this, somewhat in the order of frequency, are the affections of the air-passages below, viz., an inflammation of the mucous membrane lining the vault of the pharynx, or an acute naso-pharyngitis, an acute pharyngitis, subacute tonsillitis, acute laryngitis, acute tracheitis, acute tonsillitis or quinsy. The above are practically all catarrhal inflammations, viz., an inflammation characterized by hyperæmia and hypersecretion, in which the secretion is of a purely fluid mucus or muco-pus.

In addition to the above, we might state here that we very frequently meet with sore throats which are apparently the result of taking cold, and which are regarded by many physicians even as caused by an exposure to cold, and yet I question very seriously

whether an exposure has any causative relation whatever to the attack. I refer to what is ordinarily designated as an acute follicular tonsillitis, in which the prominent morbid lesion consists of a fibrinous exudation in the crypts of the tonsils. This disease, I am confident, belongs to that class of affections which are due to a specific poison. It results from the deposit on the mucous membrane of a specific germ, which excites a local inflammatory process at its point of lodgment, while at the same time the germ makes its way into the general circulation, giving rise to a febrile movement, something in the nature of one of the exanthematous fevers. The same, I think, is undoubtedly true of a croupous tonsillitis, or pharyngitis, the ordinary membranous sore throat, and croupous laryngitis, true croup. I think we should embrace croupous pneumonia in the same category. In other words, I believe, as regards the air-passages, that any local inflammatory process which results simply from an exposure to cold gives rise to a catarrhal inflammation, and nothing more; and, furthermore, that this catarrhal inflammation is attended by a degree of fever which is purely symptomatic of the extent of the morbid local lesion. Where we have to do with a croupous exudation or a false membrane, in any form, whether in a true croup or croupous laryngitis, or in an acute follicular tonsillitis, or in a croupous pneumonia, we have to deal with a systemic disease, attended with a characteristic local lesion, this characteristic consisting of a fibrinous exudation.

Any discussion, then, of the treatment of those local diseases which result from taking cold, is completed in the discussion of the catarrhal inflammations affecting the upper air-tract. We therefore confine ourselves to these disorders. Unquestionably an exposure may result in an attack of inflammation involving the eye, stomach, muscles, bladder, etc. This branch of the subject, however, is not so clearly associated with exposure to cold in ordinary practice, in that, in the very large majority of instances, undoubtedly, the manifestation of a cold in this region consists merely in an exacerbation of a chronic condition.

Returning now, then, to the diseases of the upper air-passages, we simply present the prominent features of the treatment of these, in the order in which they have been enumerated above:

Acute Rhinitis.—It is not often that a patient regards a cold in the head as of sufficiently serious character to warrant his placing himself in a physician's care; hence, the doctor's duty usually is completed in giving certain general directions and prescribing certain local measures, to be carried out in the hands of the patient himself. This disease manifests itself in practically three stages. In the first stage, the mucous membrane lining the nasal cavity is enormously swollen, distended with blood, while its secretory function is for the time being arrested—the membrane is in a state of what is called inflammatory stasis. This lasts for a few hours, or may be protracted for

perhaps a day, when it is followed by a profuse secretion of watery serum, which pours out from the nostrils in large quantities, trickling down upon the upper lip. This lasts from one to two days, and is followed by a slowly developing muco-purulent discharge, the serum being surcharged with mucus corpuscles to such an extent as to render it somewhat opaque; and finally, at the end of four or five days, it becomes a bright yellow, thick muco-pus. The subjective symptoms accompanying this development of the local lesion consist mainly of nasal stenosis, with frontal headache, and pain referable to the root of the nose, water in the eyes, intolerance of light, and that train of symptoms which is quite familiar to us all.

The first or dry stage, lasting but twenty-four hours at most, belongs to the stage of the disease when abortive treatment is most successful. The local measures of treatment are generally called for after the secretion has set in. For the relief of this, many drugs have been recommended and many plans of treatment suggested. I have little faith in the ordinary local astringent applications in this affection. I have never seen any good accomplished by such local remedies as tannin, sulphate of zinc, sulphate of copper, nitrate of silver, or that class of drugs, whether in weak or strong solutions. The apparent object of each of these remedies is to control secretion. Now, in a cold in the head, the primary morbid lesion consists in a dilatation of the blood-vessels of the venous

sinuses which make up the turbinated bodies. When these blood-vessels are enormously distended, hypersecretion is the necessary result. The only way by which a secretion possibly can be arrested, lies in the reduction of the venous hyperæmia. Our remedies which are capable of acting in this manner are comparatively few. Cocaine possesses the power of absolutely emptying the blood-vessels of the mucous membrane. Unfortunately, however, this action of cocaine persists only for about two or three hours, when the distension recurs again. In ordinary cases I have not much hesitation in making use of th s drug, although it should be borne in mind that cocaine has a peculiar stimulating and semi-inebriating effect on the general system, and is not always well borne by patients. In addition to this, it is undoubtedly true that many patients contract the habit of using cocaine somewhat carelessly, in order to obtain this stimulation. Whereas I do not regard cocaine as in any way as dangerous a drug as opium, as regards the contraction of any cocaine habit, yet I think no physician is warranted in prescribing it without bearing in mind the fact that, in many instances, its habitual use is attended with most unfortunate results, and that, by a simple prescription for a cold in the head, a patient may get into a somewhat mischievous and even deleterious habit. In prescribing cocaine, then, we prescribe it guardedly and, furthermore, in somewhat small doses. I have known a solution of 2 grs. to the ounce, and even

less, to have an excellent effect in relieving a patient of the ordinary distressing symptoms of a cold in the head, whereas certainly a solution of this strength can scarcely be charged with producing any constitutional effect. Unfortunately, these weak solutions are not effective in all cases. I think, however, we are justified in prescribing a 1 per cent. solution of cocaine, to be applied in a small cologne atomizer every two hours or more, according to the symptoms. This may be given in watery solution or, what is better still, suspended in fluid cosmoline or the voschano oil, which is an exceedingly agreeable application to the nasal mucous membrane. Schieffelin & Co. have recently placed upon the market an exceedingly nice preparation of fluid cosmoline containing benzoine, which comes under the name of Benzoinol, of which I have made frequent use in place of the voschano oil. Cocaine is not soluble in these petroleum oils, but a suspension is easily made by first dissolving the cocaine in a small amount of water and then adding the oil.

The use of some form of opium locally applied to the nose is attended with excellent results oftentimes, not perhaps in controlling inflammatory action, so much as in the allaying of pain and controlling, to an extent, the annoying irritation which exists in the upper parts of the nasal cavity. Following out this view we may, I think, safely prescribe as follows:

℞ Cocainae muriatis..... grs. x.
Morphinae..... " v to x.
Aquæ..... ℥ j.
M. Sig.—Use with atomizer every 3 hours.

As before stated, the fluid cosmoline or benzoinol may be substituted for the ounce of water in the above prescription, in which case it will be necessary to use the Burgess or Magic atomizer for the application. In lieu of an atomizer, the above fluids can be applied to the nose by an ordinary dropper and drawn in by insufflation.

It is sometimes more convenient to prescribe these remedies in the form of a powder, in which case we may give as follows:

℞ Cocainae hydrochloratis..... grs v.
Pulv. magnesiae..... ℥ ss.

to which may be added, if advisable, a grain of morphine.

Those drugs which belong to the mint series seem to have a notably agreeable action on the inflamed mucous membrane of the nose. Just what this action is, I am by no means certain. These may be given in the form of a snuff, as follows:

℞ Menthol. pulv..... grs. ij.
Bismuth sub. carb..... ʒ j.
Saccharae albæ..... ʒ iss.

Camphor is a remedy which of late years has come much into vogue in these disorders, and undoubtedly

has an excellent effect, and may be added to either of the above prescriptions for snuffs, in the proportion of 2 grs. to the ounce.

There are certain remedies which are useful in the form of inhalations, such as acetic acid, ammonia, iodine, etc. Patients always find their use agreeable, both on account of the relief experienced, and the facility with which they are applied. A popular German remedy, known as Hager's, is as follows:

℞ Carbolic acid..... 1 pint.
Strong alcohol..... 3 pints.
Caustic ammonia..... 1 pint.
Distilled water..... 2 pints.
M.

This is placed in an open-mouthed bottle, and the fumes inhaled through the nose. An old-fashioned domestic remedy consists in the placing upon a stove of a cup containing equal parts of vinegar and water, the fumes of which are driven off by the heat and pervade the room in which the patient sits. Based somewhat on this method is the remedy recommended by Fritsche, as follows:

℞ Acidi acetici glacialis.....
Acidi carbolici..... ää grs. ij.
Mist. oleo-balsamic..... " viij.
Tinct. moschi..... " i.
M.

This is a somewhat dainty little prescription, which can be placed in a lady's vinaigrette for inhalation.

The above methods of local relief afford us measures by which much can be attained in the way of ameliorating the attack, and, used in connection with the internal medication suggested before, we may remove very much of the discomfort which accompanies the inflammatory process; and yet it must be understood that they are not directly curative.

I know of but one measure that is unfailing in the arrest of an attack of acute rhinitis, and that consists in a very simple plan of local treatment, which is to be carried out by a physician only. A ten or twenty per cent. solution of cocaine if sprayed into the nasal cavities, the parts being watched carefully, and a sufficient time allowed to elapse until the membrane is not only completely anæsthetised, but also completely exsanguinated. This is recognized by ocular inspection and by means of the probe, which should be passed over the membrane to test not only its sensibility but the extent to which the blood has been expelled. When this is accomplished, it will make itself evident by the appearance of the mucous membrane, in a pale pinkish tinge, clinging closely to the turbinated bones beneath. When this condition has been obtained, the membrane is to be carefully wiped off repeatedly by means of pledgets of cotton until it is absolutely dry on portion covering the anterior projection of the lower turbinated bone. When the membrane is thoroughly dry, a few crystals of chromic acid are to be fused on the end of a small probe, after

which the superficial portion of the mucous membrane, covering the prominent area over the lower turbinated bone, is cauterized in a small, rounded disk from one-quarter to one-third of an inch in diameter. The action of the chromic acid is to coagulate the albumen in the superficial layers of the mucous membrane, thus changing the soft, yielding and elastic membrane on that portion, into a hard inelastic slough. What is accomplished now is, that the blood having been expelled from the membrane, the local conditions which constituted inflammation have been eliminated. The return of the blood to the part is prevented by thus rendering the superficial layer of mucous membrane inelastic by chromic acid. The effect of this slight, superficial cauterization of a limited portion of the area of the membrane covering the lower turbinated bone is to diminish the blood circulation in the whole of the membrane covering the lower turbinated body. This little operation may be done on one side or both at the same sitting, although I think, as a rule, it is preferable that a few hours certainly should elapse, or better twenty-four, when, if necessary, the operation may be repeated on the other side. I have repeated this procedure in such a very large nnmber of cases with perfect success, that I do not hesitate to describe it as by far the most successful means that we possess for arresting the local lesion of an ordinary cold in the head. This procedure, furthermore, explains the action of caus-

tics in the nasal mucous membrane in an exceedingly interesting way. It is a somewhat popular impression that a morbid lesion in the nasal cavities presents some form of diseased membrane which requires destruction. I know of no inflammatory condition in the nasal mucous membrane which requires destruction, or in which destruction of tissue is in any way indicated. The action of caustic is beneficial, then, not as a destructive agent but as directly controlling the circulation and thereby controlling the inflammatory process.

I might add, at this point, in regard to the treatment of a cold in the head, that we possess a remedy of undoubted efficacy in heat, which oftentimes will succeed in giving not only marked relief but even in curing an attack of cold in the head. One way in which this can be applied is by means of the hot water pack laid across the forehead and bridge of the nose, remaining in contact with the integument until the local symptoms disappear. Perhaps a more efficient method of making use of heat is in the form of the ordinary nasal douche, a current of water, as hot as can be borne, being passed through the nasal cavities, entering one nostril and escaping from the other. In this way, the passing of one or two quarts, or even a gallon, of hot water once or twice a day, will tone up the blood-vessels to such an extent as that the hyperæmia may be markedly relieved.

These procedures are mentioned only as meas-

ures at our command for the relief of a cold in the head, although I know of nothing so sure in its action and as prompt as the cauterization described above. The chromic acid is specifically mentioned as affording a cauterizing agent superior to any other within my knowledge, in that it is unirritating, easily controlled, and produces a superficial slough, which remains in contact with the mucous membrane without irritating it. On the contrary, it protects it really, until the parts beneath it have been so far renewed as to tolerate the expulsion of the slough. When the slough coming away at the end of two or three days, it practically leaves a healthy membrane beneath it.

Acute Pharyngitis.—This is a name usually given to an ordinary catarrhal sore throat, and consists in an inflammation of the mucous membrane, not only of the pharynx, but also of the soft palate and uvula. The tonsils are liable to be the seat of notable swelling at the same time. This affection is not ordinarily of a very serious nature, and yields readily to mild remedies, such as a gargle of a weak solution of alum, borax, chlorate of potash, tannin, etc. A very nice way of using the chlorate of potash in an attack of this sort is in the folloiwng prescription:

℞ Chlorate of potash..... gr. xxx.
Pulv. acaciæ.....
Sacch. alb..... ää ʒ ss.

A small portion of this is to be taken on the tongue and allowed to melt in the mouth. In the act of de-

glutition it is distributed over and comes thoroughly in contact with the parts. It should be borne in mind that the pharynx belongs properly to the food tract, and a diseased condition in this region is frequently associated with disturbance of the digestive apparatus. Hence, it is well to direct the patient to take for a few days a small dose of bitter water before breakfast each morning, to produce a slightly laxative effect on the bowels. Painting the parts with a 10-gr. solution of nitrate of silver, or tannin and glycerine, is always attended with good results.

Acute Naso-pharyngitis.—This is an acute inflammation of the mucous membrane lining the vault of the pharynx. It is ordinarily regarded as a form of cold in the head, and I think a mistake is not infrequently made in failing to make a differential diagnonosis between an acute naso-pharyngitis and an acute rhinitis or an ordinary attack of influenza. The two conditions, however, are totally distinct, although the symptoms are somewhat similar. In acute naso-pharyngitis, while there is considerable irritation of the nasal cavity, there is no active inflammation of its mucous membrane giving rise to stenosis, with profuse discharge. Sneezing occurs, although this is not directly symptomatic of the naso-pharyngeal disorder. The prominent symptoms consist of a deep-seated pain in the region between the nose and throat, aggraated somewhat on deglutition, with a semi-deceptive sensation of abnormal dryness or stiffness of the

parts. In addition to this, there is considerable constitutional disturbance, the thermometer showing a temperature of from 101° to 103°, while the feeling of general depression or *malaise* is always quite notable. Furthermore, while a cold in the head lasts usually from three to eight days, an acute naso-pharyngitis may persist for a month or even longer, the active febrile disturbance subsiding, but a more or less sense of discomfort, with hypersecretion, persisting to the end. The secretion is discharged both into the fauces and through the nasal cavities, and consists of a semi-transparent, whitish-gray, somewhat tenacious mucus.

An important feature in the treatment of this disease consists in the administration of general tonics, which should be given early in the attack and continued while the symptoms persist. If the patient is anæmic, iron should be given, but the prominent indication is in the use of barks. Of these I prefer the salicine or willow bark in 10-gr. doses, given four times daily, increasing the dose, if necessary, to 15 or even 20 grs. For the same purpose, quinine in 3 to 5-gr. doses may be administered, although I think usually the salicin will give better results. The local application to be used here consist in the daily use of the post-nasal syringe, the fluid being a solution of borax or chlorate of potash of the strength of 5 to 10 grs. in an ounce of water, the temperature of which should be from 70° to 80°, or even hottor, if such can be borne. This should be done at the hands of a

physician or by the patient himself, if he can acquire the necessary dexterity, by means of the ordinary post-nasal syringe, or by the Warner douche. An excellent substitute for the post-nasal douche is the Thudichum nasal douche, from half a gallon to a gallon of the hot fluid being allowed to pass through the nasal chambers in this way. A certain amount of relief can be accomplished by painting the parts with the glycerole of tannin, or better still, perhaps, a 5 to 10-gr. solution of nitrate of silver. This may be passed directly through the nasal chambers, or up behind the palate, by means of a properly curved cotton-holder. In the early stage of the attack much can be accomplished by the use of aconite, which in many cases seems to exert almost a specific influence on the course of this disease, if administered sufficiently early. This should be administered in the form of the alkaloid aconitia in doses of one-five-hundredth of a grain. I usually direct the patient to take each morning after breakfast one dose every hour, until four have been taken, and repeat the same on the second, third and fourth days, if necessary; the administration of the drug being governed somewhat by the results. Occasionally, where I have been unable to observe the patient carefully, I have directed the aconitia to be administered every hour in the above dose, until evidences of its physiological effect have been obtained, in the tingling of the lips and extremities, with the characteristic burning sensation in the fauces.

Acute Laryngitis.—This is the name we give to an acute inflammation involving the mucous membrane lining the larynx. It is mild in character, and gives rise merely to hoarseness and loss of voice. A certain amount of gravity attaches in the minds of the laity to any impairment of the voice, but as a matter of fact a mere loss of voice is ordinarily a somewhat trivial symptom. It becomes grave, of course, in connection with phthisis, syphilis or cancerous disease, and perhaps it is this association which leads the laity, as a rule, to attach so much seriousness to its occurrence. In the very large majority of cases, if not all, it is secondary to trouble of the air-passages above. The course of events is as follows: A chronic rhinitis, or a chronic naso-pharyngitis, then arises—a mild, chronic inflammation of the mucons membrane lining the larynx. In consequence of this chronic laryngitis, there develops a tendency to slight colds, under the influence of which the mild chronic inflammation in the larynx is lighted up into an acute process, causing hoarseness and loss of voice. These latter two symptoms constitute practically the only symptoms, although occasionally we may meet with more or less irritation, hypersecretion and cough. The proper treatment of this affection consists in the relief to such disease as may be found in the air-passages above. This ordinarily will be quite sufficient to relieve the local condition of the larynx, although undoubtedly prompter relief may be accomplished by the local ap-

plication of astringents directed to the laryngeal cavity. Of these we may use, by means of the spray, any of the following:

Argenti nitras..... gr. ij. to ʒ i.
Liquor ferri perchloridi... ♏ x to ʒ i.
Cupri sulphas..... gr. iij. to ʒ i.
Zinci sulphas ..... gr. v. to ʒ i.

inhalations by means of the steam atomizer, or by applying heat to certain of the volatile oils or resins, such as benzoin, eucalyptol, pinus canadensis, camphor and creosote. These are often used with a certain amount of relief, although not prominently indicated the main resource for successful treatment of this affection being in treatment of the diseased condition of the parts above.

Acute Tonsillitis, or Quinsy.—This affection I regard, in a very large majority of instances, as a manifestation of the rheumatic habit. Hence, while local applications, such as we have spoken of in connection with acute pharyngitis, may afford a certain amount of relief, the prominent indication for treatment consists in the administration of anti-rheumatic remedies. Of these none is to be relied upon with more certainty than the salicylate of soda, as follows:

℞ Sodii salicylatis..... ʒ ij.
Aquæ..... ʒ vj.
M Sig.—A tablespoonful every two hours.

In the early stages of the attack there may be given, in connection with the above prescription, 3 minims

of tincture of aconite, to be continued until its constitutional effect has been produced, after which, of course, its administration is permanently abandoned. In addition to the internal administration of the salicylates, much relief can be afforded to local symptoms, while at the same time the progress of the disease, in many cases, may be arrested or mitigated, by directing the patient to apply bicarbonate of soda to the inflamed region. This is easily accomplished by simply wetting the finger and dipping it into the soda and passing it well into the fauces, spreading it over the swollen palate and tonsils. This plan of treatment ignores entirely the old-fashioned domestic remedies, such as poultices, cold compresses, hot compresses, boiled onions, and other external applications. Their efficacy is exceedingly doubtful, and in many cases they add to the discomfort of the sufferer.

The tendency of this disease is toward suppuration, and our earlier efforts are confined mainly to aborting this; failing this, we endeavor to hasten suppuration. If the latter is threatened, it becomes necessary to thoroughly examine the parts by means of the forefinger inserted into the fauces, in order to detect the earliest evidence of suppuration and also to detect the point at which the abscess tends to approach the surface; this information being used as a guide to the free use of the knife. Of course, when the abscess has been opened and the pus evacuated, the attack is

practically cured. Even where the suppurating point is not discovered by palpation, I think much relief is often given by puncturing the tumefaction in the fauces by means of a slender, sharp-pointed bistoury, in order to relieve the vascular tension by blood-letting, thereby giving a certain amount of relief to the pain which attends the progress of the disease.

Acute Follicular Tonsillitis.—I do not regard this disease as the result of a cold, but rather consider it as one closely allied to croup and diphtheria. It is not, however, from a clinical standpoint, usually associated with either of these diseases, nor does it manifest any tendency to develop into them. The disease is really, I think, a constitutional affection, with a local manifestation in the fauces, which consists of a fibrinous exudation in the crypts of the tonsils. As evidence of the constitutional character of the disease, we usually have its onset marked by a well-developed chill or by decidedly chilly sensations. This is followed by notable febrile disturbance, the temperature rising to 103° and 104°, and even higher in young children. It runs its course in from five to seven days, and disappears spontaneously. The local exudation into the tonsils gives rise to an amount of pain referable to these regions, which is very great at times, while at the same time the general disturbance and prostration is quite marked. The indications for treatment consist in the administration of anti-febrile remedies, according to the extent of the fever; while

the local symptoms are usually combated, by the administration of a solution of tincture of iron and glycerine in the strength of one drachm to the ounce. This is to be given in from half a teaspoonful to a teaspoonful dose every two hours. I know of no better remedy for controlling the localized pain in this disease than the above, in that in its passage over the parts it seems to have a specific action, not only on the local catarrhal inflammation but on the exudation also, while at the same time it gives marked relief to the painful symptoms. If this disagrees with the stomach, it may be necessary to make local application to the parts of perchloride of iron.

After the local inflammation subsides, it is well to administer some general tonic, in that the patient is liable to be left in a condition of considerable prostration after the disease passes away.

The main importance which attaches to acute follicular tonsillitis really, I think, consists in the accuracy of the diagnosis. This is easily made, and should always be made with confidence, on account of the exceeding gravity which attaches in the minds of parents to any exudation in the fauces of children. I believe that not infrequently follicular tonsillitis is confounded with diphtheria. That there is no direct connection between the two diseases, I am confident. Furthermore, the characteristic appearances are so distinct as to render a diagnosis quite certain in all cases; indeed, the affection is oftentimes designated

as a diphtheritic sore throat, which of course is an error: The diagnostic points consist in the fact that in diphtheria the temperature is low, the exudation is a broad membrane, thick and velvety in appearance, yellow in color, and giving rise, as a rule, to no localized pain or inflammation at its onset. In follicular tonsillitis, on the other hand, the fever is high, the exudation appears simply at the orifices of the crypts and does not usually give rise to a membrane; there is considerable localized pain, with inflammation. Furthermore the color of the exudation is of a bluish-white, opaque tint, meagre in its distribution, showing no efflorescence or tendency to spread.