

"COLDS" AND COLD.

BY ROBERT HESSLER.

It is often said that on account of variable weather conditions, that is, sudden and violent atmospheric changes, the climate of Indiana is an unhealthy one and that this is the reason why "colds" are so common among us. Now is this true, especially the deduction?

Most of us, I believe, will admit that changes in temperature are rather sudden at times and that the daily weather conditions are quite variable, but that our climate—that is, the sum total of all weather conditions for long periods of time—is one conducive to the production of "colds," per se, may be denied by some.

Now when I speak of a "cold" I am assuming that everybody knows what that means. A cold—why, yes, of course. Everybody knows what a cold is.

As a matter of fact many think they know—which is something entirely different. We all know the dictionary definition: "Cold.—An indisposition commonly ascribed to exposure to cold; especially, a catarrhal inflammation of the mucous membrane of the nose, pharynx, larynx, trachea, bronchi, or bronchial tubes." (Century.)

Physicians use the term very freely in conversation or consultation with their patients. There is good reason for this. When the patient comes to the physician he not only wants a medicine or a prescription but he also wants to know about his disease or affection; he will want to know the name at least, and very likely also the cause. We all want an explanation of what is wrong when we are sick, and the simpler the explanation the better. If the physician wants to be exact and gives the explanation in technical terms that have a definite meaning, then he must explain the terms themselves, all of which takes a lot of time—and so the busy practitioner has recourse to a number of terms and phrases which have long been in use and with which the laity are familiar. When, therefore, the anxious patient asks for the common name of his disease or for its cause, and the knowing physician answers assuringly and perhaps authoritatively the magic word "cold," all is serene. Such words as

cold, rheumatism, malaria and the like are timesavers. Such terms are often used both in the sense of cause and effect.

Well, I don't see where I got my cold or caught my cold, the patient will say. Well, I don't either, the physician may reply, while he writes the prescription or puts up the bottle of medicine. In the meantime the patient will mentally go over the events of the past few days until he finds where, as he thinks, he has exposed himself to cold, perhaps to a draught or went out bareheaded; and then he is able to account for his illness or for his "cold." This is all very simple.

Now, as a matter of fact the term cold as ordinarily understood as an ailment, or even as a cause for an ailment, has practically gone out of use among physicians themselves, and the word is seldom seen in the best medical literature of today.

But let us return to the popular use of the term. Colds in the human body have a most varied form of manifestation. A cold in the head is perhaps the most common. We often hear of colds settling in certain parts of the body or of traveling about from one organ to another. A cold which begins in the nose may travel down into the lungs or down the alimentary tract. Affections with different names may follow, such as catarrh, or tonsillitis, bronchitis or pneumonia, or congestion of the stomach or liver or kidneys; we also hear of colds in the eyes and ears.

Now a "cold" in the sense of a bodily ailment is by many of us intimately connected with cold in the physical sense, that is, the absence of heat or a lessened amount of heat in the atmosphere. An ingenious explanation that I once heard was this: A sudden alternation of heat and cold acts on the mucous membrane as it does on glass—it causes it to crack, and then disease results. This would be a simple explanation why Indiana, with its great and sudden variations in temperature, is unhealthy.

Now, this sounds plausible, and yet we are told by arctic explorers that they are singularly free from colds—and acute respiratory affections generally—while in the far north, notwithstanding that they go from their warm huts or cabins out into the intense arctic cold, where the contrast is much greater than any changes in Indiana. It would seem that if a cracking of mucous membranes takes place at all it would certainly take place there, and disease result.

It is a common observation that colds are most prevalent among us during the cold season, and so we naturally associate cold with "colds."

yet explorers tell us that "colds" are practically unknown in the far north—there must need be some other explanation.

Our domestic animals with an anatomy and physiology closely resembling our own are not subject, at least to any extent, to diseases of the respiratory tract or to colds.

If our State is unhealthy, I believe we must look elsewhere than to the climate to account for the prevalence of respiratory diseases, and especially colds. The old pioneers and the farmers at the present time living in thinly-settled districts do not complain of the climate; they have been and are healthy.

The use of natural gas and overheated rooms is a fruitful cause of colds, we are told. Fires burn day and night and dry out the atmosphere, and this causes the respiratory mucous membranes to become dry and inflamed. This sounds reasonable, but, we may ask, why do not the inhabitants of dry, arid plains or deserts—with an exceedingly hot and dry atmosphere, exceeding that of our rooms—why do they not suffer from inflammations and colds? The Bedouins are said to have such delicate or sensitive mucous membranes that they can not bear the odor of a city; however, at times of windstorms they get nose and throat full of sand and dust and yet they are none the worse the day after.

Physicists tell us that the amount of moisture the air is capable of holding depends on its temperature; the higher the temperature the more moisture it can hold. A very cold air may be a very dry air which may take up considerable moisture on coming in contact with the respiratory membranes—yet it is known that in an otherwise pure atmosphere no harm results. On the other hand, a hot, dry desert atmosphere may take up considerable moisture from these membranes, and this is readily supplied as long as the body contains sufficient fluid or where there is no excessive thirst. We see practically the same conditions in an iron foundry or rolling mill. In this excessively hot atmosphere the respiratory membranes of the men may suffer very little because they give off the fluid so freely supplied the body as drink. Membranes keep themselves moist in a dry atmosphere just as the skin keeps itself moist. As a matter of fact, the amount of moisture or the dryness of the air has nothing to do with the production of colds—other things being equal.

A variation of this hot-air and dry-room theory is that it is necessary to come in contact with the outer raw air before inflammation results; that this first brings on a congestion and this in turn is followed by the

inflammation or the cold. We may also be told that improper clothing plays an important part; that we either bundle up too much or that we do not dress warmly enough. Some persons account for their colds by the underwear used, both as regards material and texture.

Now, it is well known that individuals who in town are subject to colds will be free from them on going to the wild woods. The experience of hunters far away from civilization is of interest in this connection; they will undergo all sorts of hardships and exposures, get wet and cold, leave their little cabin with its red hot stove and step out into the cold winter air and back again, and yet they do not take cold.

Taking it all in all, it would seem that we will have to look elsewhere than to exposure to physical cold for the production of the affection we know as a "cold." It is not to be denied that we do take colds after an exposure, as we all know from experience, but there must be some other factor involved. Indeed, long ago that patient scientist and philosopher, Benjamin Franklin, arrived at this conclusion. In his autobiography are recorded a number of observations that he made on colds, and he came to the conclusion that simple exposure to cold was not a sufficient cause. What this something, this unknown factor, is he did not know—in fact we are just beginning to find out. I am almost inclined to believe that if Ben Franklin had been a physician or had had the education of a physician we would have known long ago.

Now, we have been using the term "a cold" without any real definition of its meaning; we assumed that everybody knows what a cold is, but as a matter of fact there is a whole list of words used by the laity in a loose way which all stand for the same thing. A cough or a running nose, headache, sore throat, catarrhal affections, tonsilitis, stiff neck, pleurisy, rheumatism, neuralgia, lumbago, gout, fever, malaria, inflammation or soreness of the kidneys and so forth, are either synonyms for a cold or are said to be due to cold or that a cold has settled in some particular part of the body.

For instance, the significance or meaning of the term malaria as ordinarily used may at first sight seem obscure, but it is very frequently used in those cases of "cold" where there is considerable fever and perhaps some chills. As a matter of fact, real malarial fever is a comparatively rare disease and is practically absent during the winter months. It can be definitely diagnosed by an examination of the blood, and cases usually require active medication, that is, the use of some antiperiodic like

quinine, before recovery takes place. Self-diagnosed cases of "malaria," that is "colds," usually get well in a short time, and without the use of large doses of quinine.

Popular medical terms are used in a very loose way and physicians using them among each other are constantly compelled to define them or explain just what is meant—and we all know of the proverbial doctors' quarrel.

Now, if a physician speaking before a medical society or in writing for a first-class medical journal used the term "a cold" and had to give a definition he likely would find it a difficult task. Perhaps on examining the underlying facts we may arrive at some definite conclusions and perhaps be able to make a definition. It would likely be something after this fashion: A cold is the reaction of the body toward some irritant or infective matter, the amount of reaction depending on the amount of this matter and its localization in the body; the reaction may be general or local; it differs from the specific fevers by its history.

During a cold some irritant substance is in the body. This irritant may differ in different forms of cold. The inhalation of certain gases or chemicals or vegetable substances may be followed by a transient cold. Some forms are regarded as due to the inhalation of pollen, as rose cold and hay fever; other forms occur in diseases like measles, scarlet fever and the like. A common cold differs from these special forms by its history.

As to causes: "Getting chilled" or "overheated," or "getting the feet wet" are not real causes of common colds—they are regarded as simply exciting causes or of opening up the avenues for the real cause. They stand in about the same relation as the plowing of the field does to the sowing of the seed—you can plow and harrow and prepare the ground as much as you please, but no crop will follow unless you seed the prepared ground. A "cold" will not follow an exposure to cold in the physical sense unless the seeds are present—and this is why arctic explorers are free from colds. Moreover, we know from experience that we can catch a cold in the hot summer days as well as in the winter time.

This brings up the question: Where do we get the seed of a cold? As elsewhere, we get the seed from a previous crop. We get our colds from persons who have colds especially that aggravating form of cold known as catarrh.

How is it transmitted? may next be asked. Through the agency of the dust we inhale, is the answer.

A short time ago we spoke of infective matter; this infective matter is the seed, placed in the dust by persons who have colds.

Now, this is all theory, some will exclaim. Let us admit it is a theory. Now, a theory is of value if it explains phenomena and in proportion as it explains it becomes a true theory; moreover, a working theory has value in enabling us to predict.

Let me cite a few instances or examples and see how this infective dust theory, if you choose to call it so, works out.

Men who in towns are constantly afflicted with colds and catarrhs, with pains and aches in the joints, and with headaches, are often singularly free from these complaints while in the country for an extended period. It is true that mode of life has something to do with this; the exercise, the plain food, etc., all contribute to their well-being, but one factor stands out above all others—the pure atmosphere with the absence of infective dust.

It has long been noticed by those susceptible to colds that a cold often follows a ride on the railway, and it is usually ascribed to some draught—to some open window or door. In reality it is due to the highly contaminated air of the car—the aisles at times resemble in filthiness the habitation of some domestic animal.

Since interurban cars have come into use a new phase of this question of railway colds, so to speak, has developed. The open car furnishes an abundance of fresh air while the closed one in the winter season may not differ greatly from the steam road cars in regard to the polluted atmosphere. Susceptible persons have often been puzzled how they catch cold on a closed car on a comparatively warm day and do not catch cold in an open car on a cold, raw day, say in the fall before the open cars are taken off. The one is all draught and the other has practically no draught. The discerning individual will readily see that the air of one is pure, while that of the other is not.

Individual susceptibility of course varies greatly. Some persons seem almost immune, or succumb only after an unusual exposure; the attack itself may be slight or severe.

Some men habitually employed in situations with infected dust seem almost immune. Railroad passenger conductors are usually the picture of health. This is easily explained: it is simply the action of the law of

the survival of the fittest. The managers of our railways are careful whom they employ and still more careful whom they advance. A conductor reaches his position by successive advancements, or the man best suited to the position gets the place. A consumptive conductor or one with a red, inflamed nose or watery eyes, or subject to chronic hoarseness, is almost an anomaly on our large railways—if such a man did not resign of his own accord because of his inability to adapt himself to the conditions, it certainly would not take long until the management “fired” him.

This weeding out process plays a most important part throughout life. The most susceptible perish early; long lived individuals are found mainly in thinly settled regions. It is often said of the backwood mountaineers of some of our Southern States that they do not die; they simply wither up of old age.

It is not to be understood that everybody is susceptible to dust infections; as in all other diseases, there are always some persons who escape, or who are attacked so slightly at the time of the prevalence of an epidemic that we can scarcely consider them affected. On the other hand, some individuals complain severely after each exposure, after a railway journey, or after the prevalence of a windstorm or after attending a crowded hall with poor ventilation, in fact any place where the atmosphere is contaminated. The cold may show itself the same day or not for several weeks, as in the case of pleurisy. With many persons about who are infected, the chance of becoming infected is of course greater.

The habit of sweeping and dusting a closed room while persons are compelled to be in it is a most reprehensible one—the dust stirred into the air irritates the respiratory mucous membranes, to say the least, and the feather duster is a fruitful source of coughs and colds; it is too often brought into action to dust the seats and furniture in a room or hall just prior to the arrival of an audience.* The accumulated dust of a week or more may be suspended in the air ready for inhalation, and we think little about it, although a thick layer of dust on a chair we are about to occupy strongly attracts our attention, and yet it is infinitely worse to inhale the dust than it is to get it on our clothing. It is evident that this stirred up

*NOTE.—To my certain knowledge this very thing occurred in the room where the Academy met; dust which lay thickly on the chairs was stirred up with a feather duster half an hour before we met. The amount of coughing and sneezing at the time this paper was read was so noticeable that the newspapers called attention to it.

dust is redeposited on our respiratory mucous membranes and only too often with evil results.

I have had many persons under observation who are subject to this dust infection, and where the source of their cold could be readily traced, and who, moreover, suffered less after it was explained to them how they catch cold—and in proportion as they have been able to avoid the inhalation of an infected dust atmosphere they have found the climate of Indiana a healthy one.

City and town people are, of course, the worst sufferers, and a sedentary life with a body habitually overloaded with food and waste products is a contributing factor—such a life places the body at a disadvantage in warding off or in resisting disease. Colds, moreover, often allow the entrance and spread of other diseases. We can frequently trace a dangerous disease back to the time of a “cold.”

The subject is a serious one. According to the recent report of the Indiana State Board of Health last year, a total of 7,607 persons found their death breathing dust-laden air. Indeed, if the whole truth were known the total number would be even greater. The number of persons who are simply affected, made sick, and who do not die from the attacks of cold and diseases traceable to colds, is an extremely large one.

The experience of arctic explorers in the far north has already been referred to. Although severely exposed to cold, they are free from colds, and now it should be added that the moment they return to civilization they suffer most acutely.

We might be tempted to ask: Are “colds” a product of civilization? It would seem so. Civilized countries, however, differ greatly in the prevalence of colds and catarrhs and a host of infections due to infected dust—a number of which have already been mentioned. The inhabitants of many European countries suffer but little; inhabitants of the United States suffer greatly, and in our State colds and catarrhs are almost universal. I believe it was Charles Dickens who remarked about the accurate aim of the American in spitting, and travelers from the old world are amazed at the condition of our sidewalks and floors of public halls and railway coaches.

How far do we have to go to find the cause for the so-called unhealthy condition of Indiana? It would seem that if our State is unhealthy, man himself has made it so.

I might stop here, but I am inclined to think that some one will say that the term "infective dust" is rather vague. A pathologist or bacteriologist would demand something more definite. He will likely call our attention to the little bits of yellowish or greenish matter which we so frequently spit up and which is coughed up in large quantities by persons severely afflicted with inflammation of the respiratory tract. He will tell us that this matter is made up mainly of white cells from the blood which have been killed off in the struggle with this so-called infective matter, and he will mention a lot of big names that are Greek to 999 in every 1,000 persons.

Now, I have purposely refrained from making use of the term microbe. A wise sanitarian has said that as long as you speak of infective matter you come in for very little criticism, but the moment you mention microbes the newspapers jump on you and ridicule the idea that dust is dangerous or that it is dangerous to spit whenever and wherever we choose. The newspapers are great factors in disseminating useful knowledge, and if they will not speak ill of infected dust but will antagonize any statements based on microbes, it seems to me that we would best stop and let the bacteriologist continue the discussion.

A METHOD OF DETERMINING THE ABSOLUTE DILATION OF MERCURY.

BY ARTHUR L. FOLEY.

(By title.)