

Health and Happiness

Under these head lines will be continued a series of articles begun November 10. They have been compiled and edited with a view to progressive study and thought on subjects affecting our personal well-being.

Number 16.

DIPHTHERIA: ITS CAUSE AND PREVENTION.

There is probably no disease in which the study of bacteriology has accomplished more and in which have been made greater advances in diagnosis, prevention and cure. From being the disease most dreaded by parents, because of its high mortality, diphtheria can now be regarded without fear as there is a specific cure in the early administration of antitoxin.

Children who die of diphtheria are victims of the gross neglect or ignorance of parents, guardians or physicians from there need be few if any deaths from it. An early diagnosis followed by prompt administration of antitoxin has proven so efficient that in the Philadelphia City Hospital for Contagious Diseases not one death occurred among many thousands of cases treated during the past ten years, when antitoxin was administered on the first day of the disease. The fatalities are directly proportional to time of delay in administration of the specific treatment.

THE CAUSE OF DIPHTHERIA.

There are a great many bacteria in the mouth and throat—as many as seventy kinds in healthy persons—so that it might seem no easy matter to isolate the diphtheria bacillus. Streptococci are always present and for a long time were thought to be the primal cause in diphtheria but in 1883 Klebs discovered the bacillus in false membrane and in 1884 Loeffler isolated it, hence called Klebs-Loeffler bacillus. Five years later two French investigators succeeded in growing the bacilli in broth cultures and with filtrates of these—germ free—produced the disease in lower animals.

This bacillus has certain peculiarities of form, when examined under a microscope, or when artificially cultivated in the laboratory on special media or foods by which it is distinguishable to experienced observers and this fact is taken advantage of in making a diagnosis. The only way to make a sure diagnosis is to find the bacilli in false membranes. This is done in the following way:

A sterilized cotton swab is rubbed over the affected spot, and a particle of the material mixed on a cover glass with a little water, dried, stained and examined under a microscope; this is usually sufficient for the expert. In some cases, however, the swab is drawn over the surface of the proper culture medium contained in a test tube, the tube incubated for 12 to 24 hours and this growth then examined.

The diphtheria bacillus is an obligate parasite having no vegetative existence outside of the body; is very resistant to drying and may remain virulent in a dried state as when it is contained in pieces of membrane or coughed up in the course of diphtheria, or dried on such objects as a child's building blocks, for from one to five months. Its life in water is short as it disappears from it in a few days to several weeks. It is easily killed by ordinary disinfectant solutions such as a 1:1000 solution of bicloride of mercury (two 7a grain tablets to the quart of water) or a 2 per cent. solution (5 teaspoonfuls to the quart of water) of carbolic acid.

METHODS OF INFECTION.

Diphtheria is preeminently a contact disease, passed from one person to another, chiefly by direct or less frequently, by indirect contact. According to Ricketts the sources of infection are:

1—From the false membranes, sputum or excretions of the mouth, pharynx, nose, conjunctiva and deeper respiratory passages of infected individuals.

2—From convalescents and those who have fully recovered. Virulent organisms may persist in the throat or nose of convalescents for weeks and months—as long as twenty-two months after recovery.

3—From the upper air passages of healthy persons who may never have had diphtheria but who have been in direct or indirect contact with the diseased.

Virulent bacilli have been obtained from 8 per cent of the individuals who had been in direct contact with patients and it is estimated that 0.83 per cent. of the people at large carry with them virulent organisms. These are the so-called "diphtheria bacillus carriers" and to whom may be attributed the "spontaneous" origin of diphtheria.

4—From cases of latent diphtheria as represented by chronic pharyngeal diphtheria.

It is thus seen that each new case of diphtheria is derived from a previous case or from an apparently well person who harbors the germ in his nose, mouth, or throat. It is spread from the infected to others because the germs lodge on the hands or the mucous membranes of such persons. The infection is caused by kissing, by drops of mucus or saliva thrown out by the patient in coughing; by using infected cups, eating utensils, toys, pencils, by bites of candy, apples—in short any way in which there is an exchange of mouth and throat fluids in human beings. With the exception of milk, other modes of infection, such as dust are, perhaps, unimportant.

Milk is a good medium for the growth of bacteria and hence an excellent avenue for infection. There are many records of widespread outbreaks of diphtheria caused by infected milk. The germs may get into the milk at the farm or dairy either because of the presence of a case of diphtheria or because some member of the force was a diphtheria bacillus "carrier."

The disease is rarely transmitted from animals to man, although it may occur from the cat, which occasionally suffers from true diphtheria.

The upper air passages, more rarely the conjunctiva, wounds and the vulva are entrance ways of infection.

TOXIN PRODUCTION.

This bacillus does not usually invade the body but is confined to the site of infection; only occasionally in fatal cases have the bacilli been found in the blood and viscera. The damage is done by a soluble toxin or poison secreted by the germ and which becomes generalized through the lymphatic circulation doing injury especially to the heart, blood vessels, nerves and kidneys.

At the place of infection there is formed a peculiar grayish membrane which so often marks the disease clinically. There are different types of diphtheria, description of which is not here feasible. So-called membranous croup is a variety of diphtheria and there is no reason for separating the two maladies as both are caused by diphtheria bacilli.

The period of incubation of diphtheria, i. e., the time between receiving the infection and the first symptoms of the disease, is short, from two to five days. Its duration varies from a few days to weeks or even months or may be so severe at the outset that death takes place within 24 hours.

(Continued next week.)

Turning Vagrancy to Account.

Intimate contact with the class of humanity usually brought before the magistrate led the mayor of Houston, Tex., to believe that the system of dealing with minor offenders was wrong. In his estimation, a sentence spent in a town jail did not inure to the good of either the prisoner or the community. So he devised ways and means of relieving the city of the burden of supporting nonproducers, and incidentally offered the prisoners an opportunity to learn the elements of successful farming.

The Houston city farm embraces 319 acres of land just beyond the outskirts of the city. In 10 months' time the city farm has raised crops of cotton, corn, potatoes, sorghum, and peanuts, valued at approximately \$10,000; this aside from the products used by the prisoners themselves.

An interesting feature of the Houston city farm is the large, well-ventilated "bunk house," used as sleeping quarters by the prisoners. Upon their arrival at the farm the prisoner is led into the office of the bunk house, relieved of all his clothing, and introduced to a bath of cold, chemically treated water. The clothing worn by the prisoner is taken to a building apart from the bunk house, and thoroughly fumigated. Every vestige of vermin is removed. Garments worn by the prisoner during his sojourn on the farm are furnished by the city.

A canning factory, operated as an adjunct of the city farm, provides employment for the female prisoners. Sorghum and sweet potatoes are marketed, as well as green peas. Separate accommodations keep the men and women apart, and there is no social contact whatever.

Work begins at 5:30, when the prisoners awake to the notes of a bugle. Ten minutes are set aside for the regulation "setting-up" exercises, and then all hands enjoy a breakfast on the farm. Work ceases at 5:30 p. m., and the prisoners spend the evening as they see fit. Ample supplies of reading matter are kept on hand, and the morals of the men are always improved after a 30 or 60-day visit to the farm.

The buildings on the city farm of Houston have been erected at a cost of \$15,153.50, and are designed with an idea of permanency. Other equipment, including farm implements, live stock, fencing, teams, etc., brings the total investment, exclusive of land, up to \$23,765.91. It is estimated that the average cost of prisoner per month is \$18.60, this including groceries, meats, feed for live stock, salaries of superintendent, assistants and matrons, and incidentals.—By Louis J. Hennessey, in the April "Popular Mechanics" Magazine.

Business in the Trenches.

There are innumerable stories current just now, says Mr. West in "Soldiers of the Czar," about the behavior of the Russian Jewish soldiers, who come of a nonmilitant race. One of the stories concerns a colonel who offered a Cross of St. George and two hundred rubles to every soldier in his regiment who captured an ensign from the enemy.

A day or two later a Jew came along with one of these trophies, and was duly rewarded. A couple of days he appeared with another; he received another cross and the cash reward, and was told that he was a hero. Two days afterwards he turned up with still another flag. That time the colonel was inquisitive, and wanted to know how it was done.

"Well, sir, you see, I've made an arrangement with a German sergeant. We swap flags. I get my cross and two hundred rubles, and he gets promoted. Only, as his colonel doesn't give him any money, I allow him a commission on my tagings."

Perhaps I should add, says Mr. West, that this story was told me by Russian Jews, who have a keen sense of humor, and who are, on the whole, very fond of telling tales against themselves.—Youth's Companion.

At the battle of Fleuris, June 26, 1794, in the French revolutionary period, the balloon was for the first time in the service of the army. The Austrians, stupefied, saw the captives alighting entrepreneur above them at a height of 300 meters. This apparition greatly angered the Austrian General Cobourg, who cried out, "Is there anything else these scoundrels will not invent?"—The Onward.

Cause for Pride.

"What makes Jinks so proud of his ancestors? I never heard any of them did anything." "That's exactly the point. So many persons' ancestors did do things which got them into trouble with the police."—Richmond Times-Dispatch.

MARY BAKER EDDY MEMORIAL.

The memorial to Mary Baker Eddy, the discoverer and founder of Christian Science, erected in Mt. Auburn cemetery at Cambridge, Mass., was on Saturday, the 24th, turned over to the Christian Science Board of Directors by Elbert S. Barlow of New York, who had charge of its construction. Over a year and a half has been required to complete it. Christian Scientists throughout the world have contributed, as expressions of sentiment, the entire cost of over \$150,000.

The memorial is of Bethel white granite and consists of an open circular colonnade of eight columns fifteen feet in height surmounted by a cornice and cresting. The space inside the colonnade is to be filled with growing flowers. The columns rest on a stylobate of three steps, which also rest, at one side, on a broad platform of Pompton pink granite and, at the other, which is about five feet lower, on a double flight of circular steps. These are flanked on each side by a large pylon. The pylons were exhibited a short time ago at the American Institute of Architecture in New York, and were pronounced by several experts to be the finest pieces of carved granite ever executed. The detail is elaborate to an extent never before attempted in granite; some of the stems and leaves are practically free-standing, so great is the relief.

Interviewed regarding the memorial the architect, Mr. Egerton Swartwout, of New York, said: "The site is singularly pleasing; in fact, I question whether a finer site could anywhere be found. It can be seen from all sides equally well, close at hand from the cemetery road, and from a quarter of a mile away across the lake. Indeed, it is this body of water which forms the chief beauty of the site. There is a drop of approximately ten feet from the level of the road to the level of the lake, there being a natural terrace on the axis of the plot which lends itself admirably to the architectural development of the memorial. The lake is unusually still, and has a mirror-like quality which reflects admirably the white granite of which the memorial is made.

"As to the memorial I think it can be said without contradiction that, leaving aside entirely any artistic excellence, such perfection and delicacy have never been attained before in this unyielding and enduring material. There is certainly nothing in modern times that can approach it nor, as far as I know, in any of the monuments of antiquity."

Mr. Swartwout designed the new Missouri State capitol and the new federal building in Denver, and recently won the competition for the new George Washington memorial.

All that now remains to be done to complete the memorial to Mrs. Eddy is the planting for the landscape, which is to consist chiefly of some evergreen plants which will preserve their form and leaves throughout the year, and some cedars and rhododendrons.

Sleep With Open Windows.

Sleep with the bedroom windows open. The old superstition that night air is unhealthy even for an invalid is entirely false. On the contrary, night air, especially in large cities, is purer and better than day air, because it contains less dust and fewer microbes.

To get the best ventilation have the window open at both top and bottom. The average healthy person has little to fear from drafts, but the aged, enfeebled, infants and persons especially susceptible, must be protected from them.

By planting wild trees and shrubs bearing fruits about the home, the householder can attract birds and at the same time protect cultivated fruits from their ravages.

THE PARTS OF SPEECH.

A noun's the name of anything, As school, garden, hoop, or swing; Adjectives tell the kind of noun, Instead of names the pronoun stands. As great, small, pretty, white or brown; Her head, his face, your arm, my hand; Verbs tell of something to be done, To read, count, sing, laugh jump or run. How things are done the adverbs tell, As slowly, quickly, ill or well. They also mark the when and where. As now, tomorrow, here or there. Conjunctions join the words together. As men and women, wind and weather. The preposition stands before A noun, as in or through the door. The interjection shows surprise, As oh! how pretty; ah! how wise. The whole are called eight parts of speech, Which reading, writing and spelling teach. Ex.

Women Lawyers in India.

One of the most interesting of the world's great developments today in process of evolution, is the steady breakdown of caste and break away from tradition observable in India, says the Christian Science Monitor. What has actually been achieved may appear to be small; but the increasing frequency of these departures, and the steady diminution in the volume of protest they occasion in the ranks of the strictly orthodox, is full of promise for the future. It was just about a year ago that a number of leading Brannan priests agreed to take part in the dedication of the temple erected by the Calcutta shoemaker, the "absolutely unapproachable" Deno Das. A loud outcry was raised against them by their fellow Brahmans; but they persisted, and not only attended the dedication, but definitely committed themselves to a course of liberalism. They challenged their accusers to prove from the sacred writings that it was forbidden to offer salvation to the lower caste, or to hold communication with them.

A similar movement towards a greater liberty is being made amongst the women of India, and is showing itself in various ways. Only quite recently, Miss Regina Guha, a brilliant young Indian Christian, who had taken the degree of bachelor of law a few months before, at the University of Calcutta, applied to the Calcutta High Court for permission to practice in that court as a pleader. Her application was not granted; but the fact that it was made and refused, as it was, merely on a point of law, is full of significance. Miss Guha will, of course, be free to practice as a lawyer, and, as was pointed out in a recent dispatch to this paper on the subject from Calcutta, there is a great field of usefulness open to the woman lawyer in India. Women litigants in India are placed at a great disadvantage owing to the fact that they are, in the vast majority of cases, unable to confer personally with their legal representative. Women lawyers, however, can at once be made "free of the zenana," and thus surmount the difficulty. Already much good work has been done in this connection by such women lawyers as Miss Cornelia Sorabji, an Indian Christian of Parsee parentage, who, refused admission to the Indian bar in circumstances very similar to those which attended Miss Guha's application, started a consulting practice with remarkable success. Any achievement in this direction cannot fail to have far-reaching effects, and those who desire a greater freedom for the women of India will cordially welcome all additions to the ranks of women lawyers in the country.

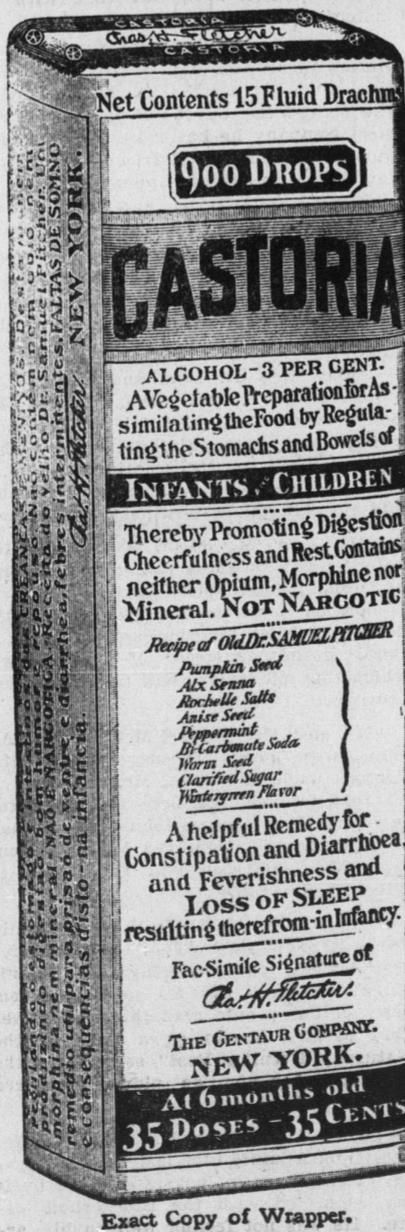
Symbolic.

"Could you suggest some suitable badge for our 'Don't Worry Club'?" asked the typewriter boarder.

"How would a pine-knot do?" asked the Cheerful Idiot.—Indianapolis Journal.

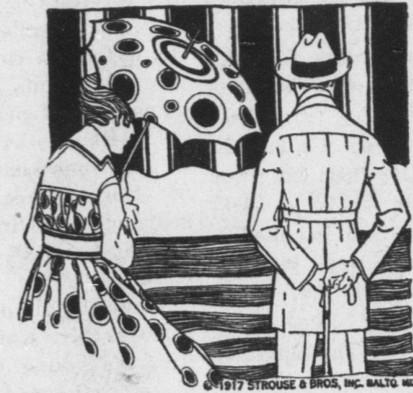
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