

they receive are uncertain or even erroneous, great harm is done in preventing the adoption and enforcement of proper sanitary measures.

Symptoms of Rabies.—The symptoms of rabies are such as we should expect to arise from a serious disease of the central organs of the nervous system. There are, first, irritation; second, paralysis and death. The rabies virus appears to have little effect upon the system until it reaches the brain and spinal cord, where it multiplies, causes irritation, and finally interrupts the functions.

Rabies in dogs is generally classified in two forms: First, furious rabies; second, dumb rabies. In the former the animal is irritable, aggressive, and bites nearly every object which comes in its way. In the latter, the muscles of its jaw are paralyzed almost from the first appearance of symptoms, and being unable to bite, it remains more quiet and tranquil. As a matter of fact there is no essential difference in these two forms of disease. The cases of dumb rabies are those in which the paralysis comes on early in the disease; but in all cases it appears sooner or later. The saliva from a case of dumb rabies is just as dangerous and virulent as that from a case of furious rabies. A dog does not necessarily bite everything which it comes in contact with, even when it has rabies and its jaws are not paralyzed. It may be aggressive and furious all of the time or only a part of the time, or not at all. There is no disease in which the symptoms vary more than in rabies of the dog, and it is consequently impossible in any description of moderate length to give an idea of the different forms under which it may appear.

Fleming has well said that it is a great and dangerous error to suppose that the disease commences with signs of raging madness, and that the earliest phase of the malady is ushered in with fury and destruction. The symptoms appear very gradually, and at first there is only the slightest evidence of brain disease. The animal's habits and behavior are changed. It may be more restless and affectionate than usual, seeking to be near its master or mistress, fawning or licking the hands and face, and apparently seeking for sympathy or assistance. Such carresses are, however, extremely dangerous, for it has been shown that the dog's saliva is virulent for a day or two before the appearance of any symptoms, and its tongue, moist with virulent saliva, coming in contact with a part where the skin is thin, abraded, or wounded, may fatally infect the person for whom the demonstrations of affection are made. The instances in which hydrophobia has developed from such inoculations are very numerous, and every one should be warned against this kiss of affection from a dog in the first stages of this disease, which carries with it not only death, but sufferings which are dreaded more than death itself.

In most cases dogs first become dull, gloomy, morose, taciturn, and seek solitude and isolation in quiet, sheltered places or under pieces of furniture. But even in this retirement they do not remain quiet. They are uneasy and agitated; they lie down and assume the attitude of repose, but in a few minutes are up again walking hither and thither, as has been said, "seeking rest but finding none." Sometimes this restlessness may disappear for a time and the animal becomes more lively and affectionate than usual. Often it sinks into a sullen gloominess from which even its master's voice arouses it but temporarily. It becomes more and more desperate in its efforts to prepare a comfortable bed, pawing or scattering the straw, or, if in a house, scratching, tumbling, and tearing cushions, rugs, carpets, and everything of that kind within its reach.

At this period dogs may have aberrations of the senses, of the sight, hearing, and feeling, which cause hallucinations and lead them to think that they are being annoyed by something, or that some animal or person is endeavoring to injure them. They crouch ready to spring upon an imaginary enemy, then rush forward and snap at the air; or they throw themselves howling and furious against a wall as though they heard sounds beyond it.

While at first the affected dog may not be disposed to bite, it becomes more dangerous as its hallucinations and delirium increase. The voice of the master or of an acquaintance may dispel the aberrations temporarily and lead to friendly demonstrations, but an unexpected movement or touch may bring on another access and lead to a quick and unexpected bite. The disturbance of the sensations leads to chills and itching. If the place where the bite occurred is accessible, the dog licks the scar and later bites and tears the tissues. This tearing of the flesh is not always confined to the site of the inoculation, but certain regions of the body appear to lose their sensitiveness, and at the same time to convey to the brain the sensation of itching. The animal in this case bites into its own flesh with apparent pleasure and satisfaction.

Such animals may take food until the disease is considerably advanced, if it is something which can be swallowed without mastication; otherwise it is dropped after remaining a short time in the mouth. Difficulty of swallowing is an early symptom, and frequently leads the unsuspecting owner to conclude that the animal has a bone in its throat. A dog which appears to have a bone in its throat is for this reason one of the most dangerous animals in existence. The supposed bone may be there, but on the other hand the symptoms which lead to this supposition may be due to partial paralysis caused by rabies, and the owner may be inoculated with the virulent saliva while thrusting his finger or hand in the dog's mouth to dislodge a bone which has no existence.

It is commonly believed that mad dogs have fear of water and are unable to drink, but this is incorrect. They differ in this respect entirely from the human patient. They have no fear or dread of water, but swim streams and continue to drink until paralysis has progressed so far that they are no longer able to swallow.

When the furious symptoms come on, a dog is inclined to leave his home and go upon a long chase, with no apparent object in view other than to be travelling onward. He trots at a rapid pace, eye haggard, tail depressed, indifferent to his surroundings. He flies at and bites dogs, other animals, and persons whom he meets, but usually does not apparently search for them or even notice them if they remain quiet. Dogs in this condition may travel many miles and finally drop from exhaustion and die. Often after an absence of a day or two they return to their homes, exhausted, emaciated, covered with dust, and presenting a forlorn and dejected appearance. Those who have pity for such an animal and try to make it clean and comfortable are in great danger of being bitten, for the disease has advanced to a point where delirium or aberration of mind is most marked, and where a treacherous bite is most common.

If the animal, instead of being allowed to escape, is kept confined, the paroxysms of fury are seen to appear intermittently, or, in the absence of provocation, they may be entirely wanting. When excited, it howls, rushes upon objects that are thrust toward it, or throws itself upon the bars of its cage and bites with great fury.

As death approaches, the animal becomes exhausted and scarcely able to stand; the eyes are dull and sunken, and the expression is that of suffering and despair. Paralysis appears in the jaws or in the posterior extremities, and extends rapidly to other parts of the body. The animal, being unable to stand, lies extended upon its side; the respiration becomes more and more difficult; there are spasmodic contractions of certain groups of muscles, complete prostration, and death. The ordinary course of the disease is four or five days. It may be as short as two or as long as ten days.

In a typical form of dumb rabies the disease comes on with restlessness, depression, a tendency to lick objects, and paralysis of the muscles which close the jaws. As a consequence of the paralysis, the lower jaw drops, the animal is unable to close the mouth, the tongue hangs out, and an abundance of saliva escapes. This condition has led to the erroneous conclusion that mad dogs always froth at the mouth. Later, the mucous membrane of the mouth becomes dry, discolored, and covered with dust.

The animal remains quiet, does not respond to provocations, and appears to understand its helplessness. As Bouley has said, the animal cannot bite and does not desire to bite. The course of the disease in this form is short, death usually occurring in from two to four days. This form of rabies is very common, and many persons know it as "drop jaw" who do not suspect its true nature.

Period of Incubation.—The incubation of rabies in persons or animals which have been bitten is extremely variable. Peuch has compiled a table of one hundred and forty-four cases of rabies in the dog, in which the date of inoculation and the appearance of the first symptoms were definitely ascertained. This table is reproduced from the "Nouveau Dictionnaire de Médecine, de Chirurgie et d'Hygiène Vétérinaire," and the writer has added a column of percentages.

INCUBATION OF RABIES IN THE DOG.

Number of days of incubation.	Number of cases.	Per cent.	Number of days of incubation.	Number of cases.	Per cent.
5 to 10	3	2.08	55 to 60	2	1.39
10 to 15	8	5.55	60 to 65	7	4.86
15 to 20	13	9.03	65 to 70	1	.69
20 to 25	25	17.36	70 to 75	5	3.47
25 to 30	13	9.03	80 to 90	7	4.86
30 to 35	25	17.36	100 to 120	4	2.78
35 to 40	6	4.17	365	1	.69
40 to 45	11	7.64	Total	144
45 to 50	9	6.25			
50 to 55	4	2.78			

According to this table, the period of incubation may be less than ten days, or it may be as long as one year. Haubner mentions a case in which fourteen months elapsed after the bite before the disease appeared. Others have recorded cases in which the period of incubation was still longer.

It is plain, therefore, that when a dog has been bitten it cannot be safely allowed to roam at large after it has been isolated but a few weeks. For absolute safety, every dog bitten by a rabid animal should be destroyed, and no quarantine less than a year can be regarded as at all safe.

The Effect of Seasons upon the Development of Rabies.—The appearance of rabies is not confined to the hot months of summer, as is often supposed, nor to any other one period of the year. The writer has compiled a table of cases of rabies in dogs by months, which were recorded on good authority. This table covers 14,066 cases. The largest number of cases occurred in June, in which month there were 1,467. The smallest number of cases in any one month occurred in November, when there were 933. The number of cases in the other months varied between these two extremes. This shows clearly that there is no season of the year which is exempt.

The Prevalence of Rabies.—Rabies is a common disease of dogs in the United States. It has occurred continuously in the District of Columbia from 1895 to 1903, as shown by the investigations of the Bureau of Animal Industry. Reports have also been received of its existence in many parts of the United States, and particularly in the cities of New York, Philadelphia, Rochester, Buffalo, Chicago, Kansas City, Baltimore, and New Orleans. There have also been many reports of farm animals similarly affected in all parts of the country, but particularly in Virginia, West Virginia, Pennsylvania, Ohio, Indiana, Iowa, Nebraska, Kansas, and Minnesota. These various reports indicate that the disease is disseminated over the whole country, and that the losses of farm animals from it are considerable. It would also appear that a much greater number of persons are annually bitten than would be supposed from any pathological data which have been published.

Diagnosis of Rabies.—The symptoms of rabies in the first stages of the disease are not sufficiently definite to enable a positive diagnosis to be made, but there is a gen-

eral rule which has been laid down by all who have had much experience with the disease, and that is that every dog whose habits and disposition appear to be suddenly changed should be considered suspicious and should be isolated. The development of rabies is so rapid that in the course of three or four days all doubts should be removed. If a person has been bitten by a suspected dog, the animal should be placed in a secure enclosure and held until a positive diagnosis can be made. This is extremely important, as it gives the infected person an opportunity to take the Pasteur treatment at a time when there is the best prospect of success. If a suspected dog has bitten some person and is afterward killed, the head and a part of the neck should be removed for subsequent investigation. A histological examination of the plexiform ganglion permits of an almost certain diagnosis being made. The presence of foreign bodies in the stomach is confirmatory evidence of rabies. To make the diagnosis absolutely positive, rabbits should be inoculated by the subdural method. As this latter method requires from two to three weeks for results to be obtained, the value of the diagnosis from examination of the plexiform ganglion becomes apparent. The writer's attention has been brought to one case in which the person bitten presented the first symptoms of rabies on the same day that the disease was diagnosed with the inoculated rabbits. If the diagnosis had been made by the rapid method, there would probably have been time for successful preventive treatment.

The Prevention of Rabies.—As rabies occurs in nature only from the bite of a rabid animal, it is sufficient to prevent such biting to guard against the appearance of the disease. While all kinds of animals may bite when suffering from rabies, it is almost always a dog which is responsible for causing the disease in man, and it is believed that cats generally contract the disease from being bitten by dogs. Efforts for prevention are therefore directed to the canine species.

The measure generally adopted is the destruction of worthless, ownerless, and vagrant dogs, but this measure cannot do more than reduce the disease without preventing it entirely. The most efficient measure for preventing the spread of rabies is to cause the dogs to be muzzled or led with a leash whenever they are allowed to appear upon the streets or in public places. This measure, if rigidly enforced, will soon diminish the prevalence of the disease, and, if enforced for a sufficient time, will eradicate it entirely. The success of Germany, Holland, Great Britain, and other countries with this disease by rigid muzzling has been remarkable, and demonstrates that the same plan can be relied upon wherever it is properly carried out. Vigorous objections are made to muzzling by the owners of dogs, on the ground that muzzles are inconvenient and irritate the animals. A properly fitted muzzle, however, is not uncomfortable, nor does it interfere seriously with the dog, except to prevent his biting. The objections to muzzling regulations when rabies exists in a community are therefore unreasonable, and should neither be urged by good citizens nor encouraged by sanitary officers. If persons insist upon keeping animals which are subject to a disease which may be communicated to human beings and cause such terrible sufferings with absolute certainty of early death as follows infection with rabies, they should be willing to adopt any measures that are necessary for the protection of the community.

ANTHRAX.—Anthrax, a disease known by the French and in some parts of this country as charbon, is a disease which affects most species of warm-blooded animals, and is widely distributed, apparently occurring in all parts of the world. It is most frequent in alluvial valleys which are subject to inundations. In the United States it is most common in the southern portion of the Mississippi valley. It has been reported from many other localities, however, in the Northern States as well as in the Southern, and on the Pacific coast as well as on the Atlantic seaboard.

Anthrax is caused by the *Bacillus anthracis*, an organ-

ism which appears to be able to multiply in nature outside of the animal body under certain favorable conditions. It is a bacillus which forms spores, and in that condition it is killed only with difficulty by heat and disinfectants, and is able to retain its vitality for years in the soil. It is consequently one of the most persistent forms of contagion, and pastures once infected may be said to be permanently dangerous.

The disease is seen most frequently in cattle and sheep, animals which are very susceptible to it; but it also occurs in horses and mules and in rare instances in swine. It may begin as a local swelling on some portion of the surface of the body, or the infection may enter the body in such a manner that internal anthrax, or anthrax fever, results. In the case of external anthrax, a small, warm, and painful swelling develops—usually on the shoulder, the neck, the throat, or about the head, under the belly, or at some other point—which rapidly enlarges and very soon becomes of considerable size. If incised, a small quantity of colored serum escapes, and fibrinous clots form, having the appearance of yellow gelatinous masses. General symptoms soon appear, and the disease rapidly progresses to a fatal termination, or in some cases there is improvement and the animal recovers in the course of one or two weeks. With anthrax that has no external tumors there are only the symptoms of intense fever with rapid loss of strength, and death in the course of two or three days. Very often the disease is so violent in its manifestations that the animals die within ten or twelve hours. Sometimes they die very suddenly without presenting any marked symptoms.

Post-mortem Appearances.—The carcasses decompose rapidly, the abdomen being distended with gas a few minutes after death. The subcutaneous blood-vessels are distended with blood, and the connective tissue and muscles are stained with hemorrhages of various sizes. Blood and reddish serum escape into the connective tissue and into the cavities of the body. A fibrinous exudate colored with blood is often found in the connective tissue, in the abdominal cavity, and sometimes in the lumen of the intestines. The glands are enlarged, softened, and deeply colored. Ecchymoses on the serous surfaces are common. The liver is generally congested and friable and often of a yellowish color. The spleen is remarkable for its size, being five or six times as large as usual, and is softened, more or less broken down, and engorged with blood.

Diagnosis.—The points by which a diagnosis is made in anthrax are, the existence of the animals in an area known to be infected with anthrax, the rapid development of the disease and the violence of the symptoms, the dark color of the tissues after death, the gelatinous exudates, ecchymoses, and especially the enlarged, engorged, and broken-down condition of the spleen. A microscopic examination of the blood after the death of the animal shows the presence of the *Bacillus anthracis*. In case of doubt the inoculation of a rabbit or a guinea-pig may be resorted to. The death of these animals in from twelve to forty-eight hours with the *Bacillus anthracis* in the blood enables a positive diagnosis to be made.

Anthrax and the Public Health.—Anthrax is a disease very easily communicated to man, and is frequently fatal in its effects. It has often been known as malignant pustule, or wool-sorters' disease. While anthrax is not communicated except by direct inoculation, the contagion is so active that such inoculation readily occurs. Men who handle the carcasses of the dead animals, especially if they try to save the skins or the wool, are particularly exposed to inoculation. Flies which have fed upon the blood of the dead animals may carry a sufficient quantity upon their proboscides to inoculate persons whom they afterward bite. Infected wool, hair, and hides are, however, the principal sources of the contagion with man.

To prevent the communication of the disease from animals to the human subject vigorous efforts should be made to stamp out the disease on its first appearance. The carcasses of animals which die should be burned or deeply buried, being covered with quicklime. If the

infection is from a circumscribed area, all animals should be removed from this to healthy pastures. Great care should be taken in moving the carcasses to the places where they are to be buried. All blood which has escaped from the body should be carefully removed, and the ground upon which the body has lain should be disinfected by burning. In working with wool and hair precautions should be taken to avoid so far as possible the inhalation of dust, and if suspicious swellings develop upon workmen who handle animal products they should receive prompt medical treatment.

Animals affected with anthrax generally present such evident symptoms of disease and die in such a short time that the carcasses very seldom go upon the market for food. However, there have been cases in which meat affected with anthrax has been sold and consumed, and in some cases it has caused many fatalities. The inspectors of meat should be on their guard and should carefully investigate all carcasses in which there are any appearances resembling those seen in this disease.

Prevention of Anthrax in Animals.—In some cases it is possible to prevent anthrax by keeping animals away from the infected pastures and by draining and cultivating such lands. In most cases the extension of the disease may be arrested by the prompt and proper disposal of the carcasses of the animals which die. In sections where the lands are extensively infected, vaccination with a properly prepared vaccine has been practised with considerable success.

GLANDERS.—Glanders is a contagious disease of the genus *Equus*, and is readily communicable to man. It is caused by the *Bacillus mallei*, and is characterized by the formation of nodules or tubercles, which degenerate into ulcers from which there is a characteristic discharge. It is a disease which, as seen in the horse, is generally chronic, with not very apparent symptoms and little fever.

Small nodules, from the size of a shot to that of a small pea, form in the mucous membranes of the respiratory tract. These may be seen just inside the wings of the nostrils or on the septum, and are easily detected. They are at first red and hard, but soon soften, become yellow, and break, giving rise to a small ulcer the size of the tubercle. This ulcer has a grayish bottom and ragged edges, and there is given off from it a viscous, oily discharge which is very characteristic of the disease. Glanders tubercles may also develop in the lungs and other internal organs.

Sometimes nodules appear on the under surface of the skin, which soften, discharge their contents, and are transformed into an irregular ulcer with ragged, overhanging edges. These often lead to irritation of the neighboring lymphatic vessels, which become swollen and indurated and appear as hard ridges which are hot and sensitive to the touch. These ulcers are seen most frequently on the lips and neck, the lower part of the shoulders, and the inside of the thighs, but they may occur on any part of the body. This form of glanders is called farcy. Farcy is sometimes looked upon as a milder disease than glanders, but it should be remembered that both are caused by the same contagion, and that the only difference is the organ in which the lesions are localized. The internal lesions characteristic of glanders, and the farcy ulcers, are often seen in the same animal.

In acute glanders there is a rapid development of tubercles in the respiratory tract, which rapidly degenerate into ulcers. There is an abundant discharge from the nostrils, with considerable fever and a cough which varies according to the location and character of the eruption. Swellings form over the surface of the body, rapidly followed by farcy-buttons which break and form ulcers. Acute glanders is often fatal within a comparatively short time, although in some cases the symptoms subside and the disease takes on a chronic form. Chronic glanders may continue for months or even years. In most cases it results in death sooner or later, but occasionally animals improve and apparently recover. In these

so-called recovered cases, however, the internal lesions usually remain and the animals continue to spread the contagion.

Diagnosis.—The clinical diagnosis of glanders is based upon the existence of the nodules and ulcers in the nostrils, upon the character of the discharge, and the existence of an enlarged, nodular gland beneath the jaw. In cases of doubt, guinea-pigs are inoculated, and these animals develop a specific orchitis which enables a diagnosis to be made.

In recent years the toxin produced by the culture of the *Bacillus mallei*, which is known as mallein, has been used as a test on the same principle that the tuberculin test is applied for the diagnosis of tuberculosis. It is injected subcutaneously, and if the horse is affected with glanders there is an elevation of the animal's temperature and also a large, sensitive swelling at the point of inoculation. Mallein has been found very useful in picking out those animals in an infected stable in which the disease has not progressed far enough to show characteristic symptoms, and those in which the lesions are internal and in which the general health of the animal is not affected.

Treatment.—For practical purposes glanders may be considered an incurable disease. The measures to be adopted for its eradication are the prompt destruction of the diseased animals as soon as a positive diagnosis can be made, and the thorough disinfection of the stables in which they have been kept and of all the articles, such as harness, buckets, curry combs, and brushes, which have come in contact with them. Glanders is a common and widely disseminated disease, and more energetic measures than have heretofore been enforced are needed for its suppression.

Glanders and the Public Health.—Glanders is communicable to man by direct inoculation or by particles of the discharge from a glandered horse coming in contact with the mucous membranes of the eye, nose, or mouth. Usually it is the persons who care for the glandered horses that become affected. Sometimes, however, persons who are passing a diseased horse at the time when it snorts or coughs may become infected by the virulent mucus lodging upon their mucous membranes or on the skin where there is an abraded surface. Cases are also known in which a wife has taken the disease from her husband, and in which persons who have acted as nurses have contracted the disease from a patient. In man it is a loathsome disease and one which usually ends in death. The disease can be guarded against only by reducing the number of glandered horses, and, in case of the disease in man, by taking suitable precautions to prevent the transfer of the contagion to those who care for the patient.

TAPEWORMS OF ANIMALS IN RELATION TO THE PUBLIC HEALTH.—The larval stages of several tapeworms are found in the organs of the meat-producing animals. *Cysticercus bovis* occurs in cattle, and when eaten by man gives rise to the common tapeworm found in this country, known as *Tenia saginata*. This tapeworm is not a very dangerous parasite. It may bring about digestive troubles, and it is occasionally very difficult to expel, but as a rule we may say that the parasite is only of temporary importance, its effects passing off when the worm is expelled.

The *Cysticercus cellulose*, or larval form of *Tenia solium*, occurs in pork. When the infested pork is eaten the adult parasite develops in man. Physicians should distinguish between the two tapeworms mentioned, because *Tenia solium* is a very much more dangerous parasite than *Tenia saginata*. If a patient soils his hands with the microscopic eggs during defecation, or if he has reverse peristalsis of the intestines strong enough to carry one or more segments of the tapeworm into his stomach, he may be infected with the larval stage of *Tenia solium*. In this case the embryos escape from the segments to the stomach and wander to various parts of the body, more especially to the muscles, the eyes, and the brain. If one or more of the larvæ develop in the eye or in the brain, more or less serious conditions may result,

according to the part which is affected. The physician, in treating patients affected with the *Tenia solium*, is also exposed to some danger of infection with the eggs, and such infection would produce the larval stage.

The existence of these two parasites in American cattle and hogs makes it proper to suggest that the practising physician has a duty to perform in seeing that all tapeworms passed by his patients are totally destroyed, unless they are preserved for scientific investigation. It too often happens that the patient is not properly instructed in this matter, and passes the worm in some place where the eggs are scattered so that they afterward infect animals. It has been observed that the meat inspection in Germany has resulted in decreasing the frequency of tapeworm disease in man, and also the infection with the larval stage of *Tenia solium*. We have no exact statistics on this subject in the United States, but it would appear that the meat-inspection system must necessarily contribute somewhat to the decrease of these parasites.

Another parasite of this kind is the echinococcus, which causes the hydatid disease. It is a bladder worm which may be found in almost any part of the body of the meat-producing animals, and especially in the lungs and liver of cattle, sheep, and swine. This parasite is not directly transmissible to man by eating an organ affected with the bladder worm, but if the hydatid is fed to a dog each separate head of the cyst—and there may be thousands in a single cyst—develops into a tapeworm, the *Tenia echinococcus*. This is probably the smallest tapeworm known, having very few segments, and only the last segment is gravid with eggs. The dog scatters the eggs of this tapeworm broadcast, and the domesticated animals become infected with it. Mankind may also become infected by too close intimacy with dogs. In Iceland, where men and dogs live during the long months of winter in the same huts and without any idea of sanitary precautions, it is said that one person out of forty-three is infected with the echinococcus disease. In some parts of Germany the disease is also very frequent. Post-mortem statistics have been given, showing that at Rostock 2.43 per cent. of the cadavers were affected; at Breslau, 1.47 per cent.; at Berlin, 0.76 per cent. The disease can be controlled only by careful meat inspection and the destruction of all hydatids that are found. To prevent the multiplication of this parasite dogs should be prevented from feeding upon the offal of slaughter-houses. Daniel E. Salmon.

VEVEY, SWITZERLAND.—Vevey, situated on the northeastern shore of Lake Geneva, four miles west from Montreux, has an admirable position and a mild climate, but is less favorably situated than the latter resort in respect to protection from the north and northeast winds, and has a more changeable temperature. Its altitude is 1,250 feet above sea level. It is a town of about 8,000 inhabitants, and is renowned for its lovely views of lake and mountain, its charming walks and excursions, and its cleanliness. Some one has called it Dutch in cleanliness, French in gaiety and love of pleasure, and Swiss in its sentiment. Together with the other towns in this protected region, it has been called the "Nice of Switzerland."

It is recommended as a favorable place for the "after-cure" to those who have been taking the waters at Aix-les-Bains, Vichy, Carlsbad, and other spas. It is also a good place for a residence before and after the Riviera season. Autumn is considered the best season, at which time one can take the grape cure, for a description of which the reader is referred to the article *Meran*, in Volume V. of this HANDBOOK. In the summer the milk cure and lake baths are used.

The water supply comes from the mountains, and is said to be unexcelled. The mortality is very low.

In winter the mean temperature never goes below 32.5° F., and in summer rarely above 86° F. The average mean monthly temperature is as follows: January, 32.5° F.; February, 35° F.; March, 40.6° F.; April, 44.9° F.; May, 49.6° F.; June, 57.2° F.; July, 58.8° F.; August,