

size of the fetal body may render delivery more difficult. (See also *Edema neonatorum*, in article on *Edema*.)

Fatty Degeneration of the New-born.—Acute fatty degeneration of the liver, heart, etc., of the new-born is not infrequent. It is explained by decreased oxygenation and increased metabolism of albumin depending upon any of the causes leading to asphyxia, also infections and intoxications. Fatty infiltration of the liver is often associated with fatty degeneration of this organ. The condition occurs most frequently in cachectic and poorly nourished new-born suffering from circulatory or respiratory weakness.

Gangrena Neonatorum.—Symmetrical gangrene may occur in congenital syphilis. Further, symmetrical, diffusely spreading, or localized gangrene (noma) occurs in the new-born as the result of certain infections, diphtheria, measles, etc. A variety of organisms have been found in these cases.

Gonorrhœa Neonatorum.—The new-born is very frequently infected with the gonococcus during birth. An intra-uterine infection may also occur. Usually the conjunctiva, vulva, vagina, and urethra are involved, but there may occur also gonorrhœal peritonitis, pleuritis, pericarditis, endocarditis, meningitis, arthritis, etc. It is very probable that the majority of the cases of peritonitis occurring in the new-born female are of gonorrhœal origin. The presence of a coincident vulvitis or ophthalmia favors strongly the gonorrhœal origin of the peritonitis. (See also *Gonorrhœa*.)

Hæmorrhage of the New-born. Umbilical Hæmorrhage.—Hæmorrhage from the cord may occur at birth, either from laceration, from disease of the vessels, or from imperfect ligation. Fatal hæmorrhage may occur from injuries to the cord before or during birth. In other cases of more rare occurrence there may take place a constant oozing from the umbilicus itself or from the properly ligated stump. Such hæmorrhage is most likely to occur between the fifth and fifteenth days. The children affected are usually cachectic or under-developed. Congenital hæmophilia, syphilis, abnormal composition of the blood, imperfect coagulability, failure of the normal retrogressive changes in the umbilical vessels so that these remain distended and patulous, vascular ectasis, etc., are causes adduced. In some cases no adequate cause can be discovered. Cachectic conditions of the mother are regarded as predisposing causes.

Hæmatemesis and Melæna Neonatorum.—Hæmorrhage from the gastro-intestinal tract occurs occasionally in the new-born without other appreciable symptoms, and has therefore been regarded as an essential pathological condition. Hæmophilia, syphilis, congestion of the gastro-intestinal tract, ulcerations of stomach or intestines, infection, etc., are the chief causes adduced. According to von Preuschen melæna neonatorum is secondary to the occurrence of cerebral hæmorrhage resulting from delivery. It is known that under other conditions certain diseases of the brain give rise to secondary hæmorrhages in the stomach and intestine.

Hæmorrhage of adrenals is of relatively frequent occurrence in the new-born. The cause is not clear, but traumatism during birth, thrombosis of the adrenal vessels, infection, and marasmus are supposed causes.

Hæmorrhage into the kidney may result from thrombosis of renal vessels.

Hydrocephalus Neonatorum.—Congenital hydrocephalus is an accumulation of fluid within the ventricles of the brain. The cranial bones, not being united, yield to the internal pressure and are separated, the frontal, parietal, and occipital bones become expanded and thinned. The cerebral convolutions become flattened, the hemispheres finally being spread in thin laminae on either side, the thickness of the brain substance decreasing from the base to the vertex. The membranes usually become thickened. The head becomes greatly enlarged, soft, and fluctuating. The cause is not clear; the condition by some being regarded as an inflammatory process of the arachnoid, by others as due to stasis, caused by obstruction of the veins of Galen or of the sinuses. (See *Hydrocephalus*.)

Icterus Neonatorum.—A slight degree of yellowish color is of such frequent occurrence in the skin of the new-born that it must be regarded as physiological. In strict usage the term icterus neonatorum should be applied to this condition alone. According to Frerichs the icterus is due to a fall of pressure in the liver capillaries, thus favoring the entrance of bile into the blood. By others the condition is explained as due to the excessive destruction of red blood cells and an increased production of bilirubin which is absorbed. The dilatation of the blood-vessels may cause obstruction of the bile capillaries. According to Birch-Hirschfeld the jaundice is due to compression of the biliary capillaries by the dilated vessels in Glisson's capsule. As a result of the venous congestion the connective tissue of the capsule becomes œdematous, this also aiding in the compression of the vessels. According to Ziegler the icterus is caused by resorption of the bile pigment not only in the liver, but also from the meconium which is absorbed and carried back to the liver. The physiological icterus neonatorum is characterized by a diffuse yellowish pigmentation of the tissues and a deposit of bilirubin in various organs and tissues, especially in the kidneys.

Pathological icterus of the new-born may be caused by sepsis (in the majority of cases), syphilis, malformations of the biliary passages, new formation of connective tissue about the bile ducts, patency of the ductus venosus, acute hepatitis, etc.

Myotonia Neonatorum.—In the early weeks of life the child may be affected by persistent, painless, muscular spasms without increased excitability of the muscles or nerves. In this respect it is distinguished from tetanus, for which it is often mistaken. It is to be regarded as an exaggeration of the physiological hypertonia of the new-born (pseudotetanus). The anatomical basis consists of degenerative changes in the anterior roots and cells of the anterior horns; the exciting causes are gastro-intestinal disturbances, congenital syphilis, etc.

Ophthalmia Neonatorum.—Catarrhal or purulent conjunctivitis is of frequent occurrence in the new-born. The great majority of cases are of gonorrhœal origin, but it must be borne in mind that other organisms (streptococcus, staphylococcus, etc.) may also cause the disease, as well as the use of too strong antiseptic solutions. (See *Conjunctiva, Affections of*.)

Pemphigus Neonatorum.—The condition of the skin characterized by the formation of blebs or bullæ in the epidermis occurs in a great variety of forms, and its pathology has been variously described. The etiology of the affection is not clear. Some of the cases described under this head are of syphilitic origin, others are due to an infection with the streptococcus. The form described as *pemphigus acutus contagiosus neonatorum* is probably a distinct disease of bacterial origin. In certain congenital cases there appeared on the second day a general pemphigus eruption over the palms, soles, and mucous membranes, the fluid of the bullæ being at first clear, later becoming slightly bloody. Bacteriological examinations have been negative; syphilis and all ordinary causes of pemphigus being excluded, the condition is regarded as due to an intra-uterine intoxication. (See *Pemphigus*.)

Pneumonia.—Catarrhal pneumonia occurs very frequently in the first few days of life. In the case of premature births over forty per cent. of the deaths are due to this condition. In eighty per cent. of cases born at term the infant is poorly developed, with congenital weakness of the respiratory tract. The so-called "white pneumonia" is due to congenital syphilis. Pneumococcus pneumonia may be acquired during intra-uterine life as well as in the first weeks of extra-uterine life.

Rachitis.—Congenital rickets is rare. Its etiology is not clear. The condition is associated with hydramnion and hydrocephalus. Premature birth usually takes place. Congenital rickets presents a pathological picture similar to that of extra-uterine rachitis. Two forms of fetal rickets are described, *rachitis micromelica* and *rachitis an-nulans*. The true rachitic process is to be distinguished from the disease of the primordial cartilages, the so-called

chondrodystrophia fetalis, which is associated with cretinism. (See *Rachitis*.)

Sepsis Neonatorum.—Sepsis of the new-born is one of the most frequent and important conditions of this period of life. The streptococcus, staphylococcus, pneumococcus, bacillus coli communis, typhoid bacillus, gonococcus, etc., are the exciting causes. The organism may be transmitted from the mother during intra-uterine life, or acquired through injury received during delivery, through infection of such wounds after birth, or through the stump of the umbilical cord. The latter mode of infection is very common. Cryptogenic infection may occur. The skin of the new-born possesses much less resistance to the entrance of micro-organisms than the skin of adults; the primary seat of infection in infants often being a small localized purulent process in the skin, of relatively slight importance.

Struma Congenita.—The condition of congenital enlargement of the thyroid is regarded partly as inherited from mother or father, partly as an idiopathic or endemic disease. The thyroid may present a simple hyperplasia or cyst formation. Delivery may be rendered difficult. The infant may die after birth from the result of compression of the trachea. The condition is of relatively frequent occurrence in the Tyrol.

Uric-acid Infarction.—In the kidneys of the new-born infant there is almost always present an accumulation of urates which appears as glistening, golden, or yellowish-red lines converging toward the papillæ of the pyramids. The urine in the pelvis of the kidneys also contains an abundance of urates. Microscopically the collecting tubules are found to be filled with dark granular masses which on the addition of acetic acid dissolve, uric acid crystallizing out. An albuminous framework is usually left behind. This condition is termed uric-acid infarction. It is most marked after the second or third day, but may be present up to the seventy-sixth day. It usually disappears promptly, but if persistent may lead to irritation of the kidney and nephritis. It was formerly believed that such infarctions occurred only in children breathing after birth, but it has been shown that they are found also in still-born children. The cause is not known. Changes in metabolism following birth, defective oxidation, inability of the urine of the new-born to dissolve the acid, are among the causes adduced in explanation of the phenomenon.

Tetanus Neonatorum.—Tetanus is one of the earliest and most fatal diseases of the new-born, occurring with greater frequency in the first and second weeks of life than at any other age. The infection occurs through wounds received during delivery or through the stump of the cord. The favoring conditions are: uncleanliness, atmospheric and climatic conditions, primary pyogenic infection, etc. In nearly every case evidences of inflammation and suppuration are found in the umbilical vessels.

Thrombosis.—Thrombosis of the adrenal, renal, or spermatic veins may occur in the new-born. Hæmorrhage (so-called hæmorrhagic infarction) of the adrenal or kidney may result, and in the male infant gangrene of the testicle and scrotum. Such thrombosis may be the result of traumatism during delivery or septic infection. In anæmic and cachectic infants there may occur marantic thrombosis, affecting most frequently the left renal artery. Hæmorrhage and necrosis of the kidney result.

Sclerema Neonatorum.—See *Edema neonatorum*, under *Edema*.

6. NEW GROWTHS.—The most common forms of new growths affecting the new-born are the congenital *fibromata*, *neurofibromata*, *angiomata*, and *lymphangiomata*. Birth-marks, vascular, pigmented and hairy naevi, moles, warts, etc., belong to this class. Special forms of lymphangiomatous tumors occur in the tongue, lips, and neck (*macroglossia*, *macrocheilia*, *hygroma colli congenitum*). *Elephantiasis-like* growths may occur locally or form diffuse thickenings in certain regions. *Lipomata* of the neck, back, and axillary spaces are not rare.

Congenital teratoma, representing either a monoger-

minal or bigeminal inclusion, are relatively frequent. They may be found in any part of the body, but are especially common on the head, in the mediastinum, kidneys, ovaries, and testicles. Congenital *rhabdomyomata* of the heart, kidney, etc., are to be placed in this class. The most frequent malignant tumor of the new-born is the so-called *embryonal adenocarcinoma* of the kidneys (*mixed sarcoma*). Such growths are most probably derived from inclusions of the myotome and are to be classed with the teratomata (*malignant teratomata*). The most common epithelial tumors occurring in the new-born are *papillomatous* growths of the larynx, and cystic tumors of the kidneys, liver, and ovary. Adenomata of the adrenals and kidneys have been described. Carcinoma has also been found in the new-born in a number of cases (carcinoma of the liver, kidneys, stomach, and intestine). Cases have been reported by Jacobi, Wedl, Brown, Friedrich, Ritter, and others. Cystic tumors of the pineal gland, cholesteatomata, dermoid cysts, and teratomata of the brain and meninges have been described.

Aldred Scott Warthin.

NEW MEXICO.—New Mexico has climatically the same features as Colorado, and in a less degree those of Arizona. The State runs from the Raton range, which divides it from Colorado, for 390 miles south, to the boundary line of old Mexico. On the west is the main range of the Rocky Mountains or backbone of the continent, separating it from the State of Arizona. Its eastern boundary ranges with the great State of Texas. New Mexico is for the most part a high plateau rising to 7,000 feet at Santa Fé and dropping to 3,500 feet in the lower Pecos valley. The general tendency of this high plateau is to drop from the northwest corner toward the southeast. As it is on the leeward side of the main range, the winds from the Pacific Ocean are dried for the most part before reaching it, so that there is very little winter rain and only a light snowfall. What rain there is falls, as it does in Colorado, principally during the months of July and August, and New Mexico does not have the well-marked double rainy season of Arizona. The winter precipitation falls usually between January 1st and April 1st, though in the Pecos valley region this period is somewhat extended and the rainfall is heavier than the average for the State. The winter rains or snow-storms are marked by almost parallel curves of from one to seven inches of precipitation. These curves are outside the mountain lines, where, of course, the precipitation is greater. They are caused by the diffuse or diverting influence of topography on the aqueous currents borne to New Mexico from the south Pacific Ocean across Arizona. "The summer rains," writes Captain Glassford, "are otherwise influenced, and the higher precipitations appear upon the levels west of the Canadian River and upon the Cañon course of the Pecos, which includes Las Vegas and Fort Union. At this point the fall reaches seventeen inches. The lowest summer precipitation is found in sections most favorably influenced by the winter rains. The minimum is found in the southwest."

It is very much to be regretted that, in spite of the climate being the chief attraction of New Mexico to the travelling invalid, it is almost impossible to get full and accurate meteorological data concerning the various resorts, and the observations that are reported are usually for only a very short period, and the humidity and wind have very seldom been recorded. Many have written in general terms of the fine climate, but have failed to give the facts about the local topography, aspect, and soil of the towns. Unfortunately for health purposes, on the lower elevations the towns are usually situated upon an adobe soil in the river bottoms. However, the literature being such as it is, we will proceed to discuss the more important places available for health seekers.

In travelling by railway from Colorado into New Mexico, as the descent is made on the southern slope of the Raton range, one notices that the air is warmer and the sunshine more brilliant. However, the elevated towns in the northern portion of New Mexico are very

similar in climate to those of Colorado, although they are somewhat higher in elevation. Las Vegas (6,500 feet) and Santa Fé (7,000 feet) closely resemble Denver in temperature, while Silver City in the southwest, stand-

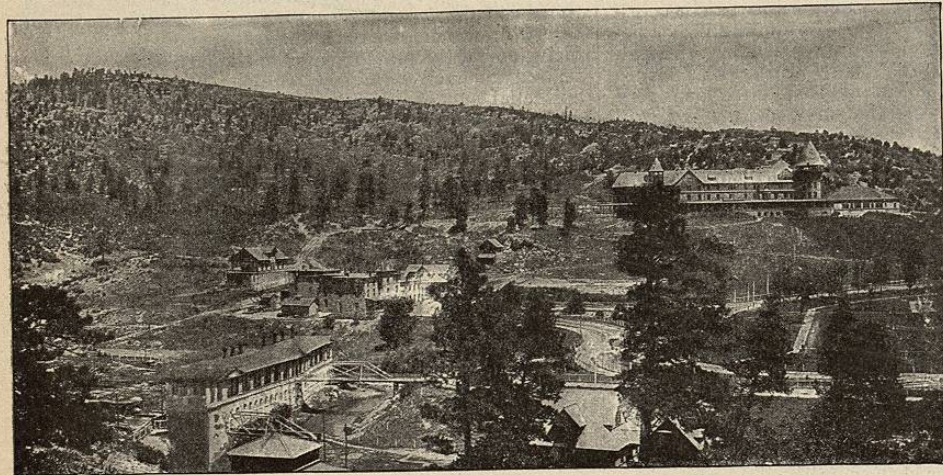


FIG. 3589.—View of the Montezuma and Bath-houses, Las Vegas Hot Springs, New Mexico.

ing at an elevation of 5,800 feet, has a markedly milder climate, which is partly accounted for by its admirable shelter from severe winds.

The annual average precipitation for the State is 13 inches, ranging from 5 inches at Deming to 33 inches at Chama, while the average of 13 inches does not include what falls upon the mountain summits, which is probably double this amount.

The annual mean relative humidity approaches 40 per cent. with an annual temperature of 60 per cent.; the absolute humidity is 2.3 grains, a little more than that of Colorado, which the higher temperature accounts for.

In the elevated northern portions of the State the annual wind movement is about the same as that of Colorado, but it is markedly less in the southern and lower portions.

Vegetation is sparse throughout the State, as irrigation has been very little carried out. The soil generally is of the peculiar clay which is known as adobe. This does not readily absorb the moisture, but when baked in the hot sun gives rise to a very fine dust. The treeless character of the most part of the plateaux and valleys combined with the adobe dust, which is light and volatile in character, makes the dust storms in this country peculiarly disagreeable.

Charles F. Lummis, in his delightful book upon New Mexico, which he calls "The Land of Poco Tiempo," summarizes the country in this sentence, "Sun, silence, and adobe." He laments, as all visitors to New Mexico must, the absence of large and well-equipped cities, and the general scarcity of the resources of civilization. All this, however, is rapidly improving each year. Good soft water, gravel soil, and good and well-cooked food are scarce, but the climate is superb. Above the thirty-fifth parallel of latitude the climate resembles that of Colorado, but is somewhat milder in the winter and warmer in the summer. Below this latitude the winters are markedly milder. Those for whom the more bracing climates of the northern latitudes are not desirable, and who also need a somewhat lower elevation, can find in New Mexico almost unrivalled climates for their purpose. The summer heat, however, begins to be felt early in April, and seems to gather force well into October, but for those who can stand a rough camping life the summer climate of the mountains is delightful.

On the southern slopes of the Raton range is a fine

farming country with a good all-the-year-round climate. The air is dry, but the soil is adobe, and there is considerable irrigation carried on. There are no towns of any importance, but for those convalescent invalids who can

carry on farming and cattle raising it is a good country. Throughout this district the rainfall and humidity are higher, and the temperature lower than they are in the country lying farther south.

Raton is a small town on the main line of the Santa Fé just over the Colorado border. It stands at an altitude of 6,600 feet and has 4,000 inhabitants. It faces south and east with the Raton range behind it. It has an attractive country around it, and

there are several small hotels and boarding-houses where the rates are from \$25 to \$30 per month for board and room.

A few miles farther south and lower down lie Maxwell City and Springer, both of them small villages where cheap accommodations can be found in the town or among the farmers of the neighborhood.

Las Vegas, elevation 6,384 feet, population 8,000, of which perhaps half are Mexicans and Indians. It is somewhat exposed to north winds, and lying in the valley with an adobe soil, is hot and dusty in summer. It is generally warm and pleasant during the winter. The average mean temperature in winter is 40°; spring 55°, summer 80°, autumn 60° F. The rainfall averages twenty inches, of which a large half falls during April and August. The Atchison, Topeka and Santa Fé Railroad has recently built a very handsome and comfortable hotel and eating-house, where the famous Harvey catering can be enjoyed, but accommodations at a more moderate price can be obtained in the town, and there is a good sanitarium in charge of the Sisters of Charity.

Las Vegas Hot Springs, elevation 7,000 feet, is reached by a stub railway running seven miles from the town of Las Vegas up into the western hills. Here is an excellent hotel, The Montezuma, with a few other smaller buildings and some good bath-houses. The Montezuma is situated on the edge of the cañon facing south, and is well sheltered from the winds. Las Vegas Hot Springs has a delightful winter climate, for the most part warm and dry. It is reasonably cool in summer. The springs are both hot and cold. The hot water has a temperature of 144° F. The mineralization of the springs is alkaline and small in amount. They are not very potent waters, but the bathing is good, and there are some excellent mud baths which have been found valuable for rheumatism and allied disorders.

Santa Fé is reached in a similar manner from the main line of the Atchison, Topeka and Santa Fé Railroad. It is one of the oldest and most interesting of the towns of New Mexico. It retains the character of a Mexican town, which is an outgrowth of the old Indian pueblo. It has many quaint features and buildings to interest visitors. The chief hotel is a fairly good wooden structure, but is usually indifferently kept; but there is a sanitarium well managed by the Sisters of Charity. "The town lies on a treeless plateau at the base of one of the spurs of the Rocky Mountains. The general trend

of the site is west-southwest, the mountains affording protection to the north and east. Within thirty miles are peaks of 12,000 and 13,000 feet elevation. The low hills are covered with a growth of piñon trees. The town has of late improved its water supply, but much is yet to be desired in the matter of drainage, and there are few shade trees. The soil is light and sandy. The climate is not very different from that of Denver. It is somewhat cooler in summer, not quite so cold in winter, and a little less windy throughout the year.*

The climate is very similar to that of Las Vegas Hot Springs, but being less sheltered, is somewhat more bracing, though also more windy.

Continuing the journey southward on the Atchison, Topeka and Santa Fé Railroad, the traveller crosses the lower end of the upper Pecos valley between San Maguel and Glorieta. This is a beautiful upland valley twenty-five miles north of the Glorieta Mountains through which are scattered stock ranches and small farms. It is a well-timbered, park-like district surrounded by mountains. It has a fine climate and good soft water. There are capital hunting and fishing, and much of the country still remains wild, there being a timber reservation covering 702 square miles.

Albuquerque, elevation 5,000 feet, population 10,000, is situated in the valley of the Rio Grande, and it is here that the main line of the Santa Fé Railroad joins its western division along which flows the travel to California. The Atchison, Topeka and Santa Fé Railroad Company have built a handsome and commodious hotel and eating-house similar to that at Las Vegas, where the best food is served. The old town, which lies near the river bed, is not very desirable for residence, but the newer part of the town on the bench above it is well situated. It is a live, modern city with fairly good accommodations. It has a good climate, though it is somewhat too windy in winter and too hot in summer.

Deming, elevation 4,300 feet, population 2,500, stands on a plain, just about fifty miles square, surrounded by mountains. It has a mild climate, it never freezes during the day in winter, the mean seasonal temperature being: winter 44°, spring 63°, summer 87°, autumn 64° F. The wind record has not been kept, but during the spring the winds are said to be quite high. The precipitation is 8.8 inches, the greater part of the rain falling in the summer. Accommodations are good.

Silver City is situated on an elevated plateau in the Chichuachua valley south of the Pinos Altos Hills. The soil is sandy, the rock formation consisting chiefly of slate and limestone. It is at the end of a branch line of the Santa Fé Railroad, forty-eight miles from Deming and about ten and one-half hours by railway from El Paso. Foot-hills several hundred feet in height surround it except toward the south, while a few miles farther back are mountains several thousand feet in height. In this way it enjoys excellent shelter from winds. No wind record is obtainable, but evidence tends to show that the wind movement

is moderate. The mean temperature for January is 37°, for July 72°, and for the year 54° F. In ten years there have been only six days in which the temperature fell below 10°, and only twenty-two days when it rose above 90° F. The average annual precipitation is 14.58 inches, of which as much as 8.11 inches must usually be credited to the months of July, August, and September. The average number of cloudy days is 37. The average relative humidity is 46 per cent. The absolute humidity is 1.71 grains; dew point 29. The water is pure, but rather hard.

Silver City lies in the same latitude as Savannah, Ga., but owing to its elevation is, of course, much cooler and dryer. There are four hotels of moderate excellence, and there is a good sanitarium kept by the Sisters of Mercy. The country around, particularly among the pines, lends itself to a delightful camping life.

Nine miles to the north, at an altitude of 6,040 feet, is Fort Bayard. The old army fort has been converted into a general government hospital for the treatment of pulmonary tuberculosis. It is now in the third year of its existence. Major D. M. Appel, M.D., surgeon in command, writes under date of June, 1901, as follows:

"The selection of Fort Bayard as a site for a sanitarium for the treatment of pulmonary tuberculosis has been amply justified by our results. Its location in the arid mountainous region of southern New Mexico, at an altitude of 6,040 feet, affords a climate permitting comfortable outdoor life during the entire year. The mean maximum and minimum temperatures and the precipitation for the past decade are as follows":

Month.	Mean maximum. Degrees Fahr.	Mean minimum. Degrees Fahr.	Precipitation. Inches.
January.....	52.77° +	23.15°	1891, 19.30
February.....	54.13	25.83 +	1892, 8.89
March.....	60.52 +	30.92 +	1893, 15.47
April.....	68.43	37.10	1894, 9.12
May.....	77.33	45.45 +	1895, 15.09
June.....	86.45	52.68	1896, 18.85
July.....	82.91 +	55.94	1897, 18.00
August.....	85.32 +	56.98	1898, 15.91
September.....	81.97	52.09	1899, 10.43
October.....	71.94 +	41.20	1900, 12.66
November.....	61.29 +	31.90	
December.....	53.20 +	24.66	
General average.....	69.56°	39.79°	



FIG. 3590.—Meadows near Las Cruces, New Mexico.

The statistics of the results obtained up to the present time confirm the general favorable opinion of the exceptional value of sanitarium treatment at high altitudes.

* Solly's "Handbook of Climatology."

Las Cruces, elevation 3,872 feet, population 3,500. This little town is situated on the Old Mexican division of the Santa Fé Railroad, forty-three miles north of El Paso. It lies in the Mesilla valley, which is a portion of the Rio Grande valley. At this point the valley is wide and fruitful under irrigation, there being large fields of alfalfa. The water is pure, but somewhat alkaline. There are moderately good accommodations in the town, but more suitable ones for the invalids are found in the ranches around, particularly at the Alameda, which is a mile distant.

The Organ Mountains are twelve miles east, rising to a height of 8,949 feet. The winter climate is delightful and continues pleasant until April, when the heat becomes too great for the comfort of Eastern visitors. The mean maximum temperature is, as computed for the three years, 1896 to 1899: autumn, 78°; winter, 58°; spring 76°; summer, 92° F. The mean minimum temperature is: autumn, 41°; winter, 23°; spring, 41°; summer, 60° F. The average annual rainfall for the last twenty years was only eight inches. The number of cloudy days for the year is twenty-five. In the winter the average is four cloudy days a month. The average wind movement is believed to be about five and one-half miles an hour.

The Alameda can accommodate forty guests. The rooms are of good size, and there are plenty of porches. The rates are from \$10 to \$15 per week. Fifteen miles east of Las Cruces Van Patten's resort stands in a valley of the Organ Mountains at an altitude of 6,000 feet. Here there is a substantial stone house which can accommodate twenty-five persons, and it is surrounded by tents, and is a cool and pleasant place in which to pass the summer.

Pecos Valley.—Separated from the Rio Grande valley by high mountains is the Pecos valley region lying to the east; it comprises a wide belt of land running southward for a distance of one hundred and seventy miles from Roswell to Pecos City. Here irrigation is extensively carried on, and it is a good place for those who have sufficiently recovered their health to carry on farming or stock-raising. The accommodations in the hotels and boarding-houses are, however, not very good, and the valley is rather too hot in summer and too windy, particularly in the spring, to make it desirable for most invalids. Roswell, at the northern end of the valley, is rather better sheltered than the town of Carlsbad. The elevation of the valley varies from 4,000 to 3,000 feet. At Carlsbad the mean temperature for autumn is 63°, winter 44°, spring 63°, summer 79° F.

S. Edwin Solly.

NEW ORLEANS, LOUISIANA.—This great Southern city and port is situated upon a double curve of the Mississippi River, one hundred and seven miles from its mouth, although a much less distance from the coast in a straight line. The city lies chiefly upon the left bank of the river, and actually covers about forty square miles, although the city limits embrace an area of something like one hundred and eighty square miles. One of the peculiarities of this city, and one that is doubtless conducive to its healthfulness, is the great area which it covers, thus permitting liberal air spaces and grounds about the buildings in the residential districts. The city is built upon low land, lower than the surface of the river at high-water mark, and huge embankments of earth called "levees" are required to prevent an overflow, and even these are occasionally broken through. The soil is of an alluvial nature, and by digging from three to four feet one usually reaches water; hence the houses have no cellars, and the dead have to be buried in tombs elevated above the ground.

There are a large number of bodies of water—lakes, bayous, swamps, and the like—about the city, and to the north of the city is Lake Pontchartrain, forty miles long and twenty-four miles wide. This lake is connected with the Gulf of Mexico, and forms with the Mississippi River an isthmus upon which the city is built. The population at the census of 1900 was 287,104, composed of

Creoles, Americans, and negroes. It is obvious, from the low, level situation of the city, that the problem of drainage is a difficult one; this is partially accomplished by gutters which run into open canals, and these in turn empty with a sluggish current into Lake Pontchartrain. A comprehensive system of sewerage, which will effectually dispose of the house waste and other sewerage and cause it to be discharged into the river below the city, is said to be now under construction. The drinking-water is generally obtained from the rain, stored in tanks or cisterns, each house being provided with such a receptacle, which is a peculiar feature of the architecture. For other purposes the water of the Mississippi River is used, this being taken directly from the river without filtration.

The city itself and its surroundings are very attractive, especially to a Northerner. The vegetation is of a semi-tropical nature and very luxuriant. The variety of races and the common use of the French language, the streets, markets, cemeteries, parks, and various points of historic interest, and the extensive wharves with the vast amount of inland and foreign shipping, all afford interest and diversion. The French market is the great "sight" of New Orleans, and is best visited in the early morning.

The accommodations are good, the principal hotel being the comparatively new St. Charles, occupying an entire square in the heart of the city. A favorite winter excursion is to New Orleans at the time of the famous "Mardi Gras," which is said to be more brilliant than the carnival at Nice or Rome.

The mortality of the city is about 27.58 per 1,000. The following meteorological table gives the principal characteristics of the climate of New Orleans:

CLIMATE OF NEW ORLEANS, LA. LATITUDE, 29° 58'; LONGITUDE, 90° 4'. PERIOD OF OBSERVATION, THIRTEEN YEARS.

	Jan.	Mar.	June.	Aug.	Nov.	Year.
Temperature—						
Average mean temperature or normal (degrees Fabr.)	54.7°	63.1°	81.0°	81.7°	61.0°	69.8°
Average range	13.9	15.0	12.4	12.1	13.1	
Mean of warmest	61.2	71.7	87.2	88.1	67.8	
Mean of coldest	47.3	56.7	74.8	76	54.7	
Highest or maximum	73	84	97	96.5	82	
Lowest or minimum	20	36.5	65	69	31.5	
Humidity—						
Average mean relative	72.2%	70%	72.3%	73%	71.6%	71.4%
Precipitation—						
Average in inches	5.52	5.75	6.04	5.99	5.58	64.63
Wind—						
Prevailing direction	N.	S. E.	S. E.	S. E.	N.	S. E.
Average hourly velocity in miles	7.8	8.6	6	5.5	8	7.4
Weather—						
Average number of clear days	7.6	10.1	8	7.8	9.5	110.5
Average number of fair days	12.2	10.6	16	18.4	10.2	156.1
Average number of fair and clear days	19.8	20.7	24	26.2	19.7	266.9

It will be seen that the climate is tropical or semitropical in nature, warm and moderately moist. The mean temperature of the year is 69.8° F. The highest average summer temperature is 94° F., and the lowest average winter temperature is 27° F. On February 13th, 1899, an extraordinary and unheard-of event occurred, in the formation of ice at the mouth of the Mississippi River, the thermometer indicating a temperature of 10° F. On the 17th of the same month ice flowed past New Orleans into the Gulf of Mexico.*

Snow is a rare phenomenon, but cold waves occasionally occur, accompanied by frost, which nips the sugar cane and cotton plant.

The annual rainfall varies from 31 to 64 inches, the spring and summer being the rainiest seasons. The average mean relative humidity is 71.4 per cent., about the same as that of New York City.

* "The Cold Wave of February, 1899," Guy Hinsdale, Transactions of the American Climatological Association, 1899.

According to Hinsdale ("Climatology, Health Resorts," vol. iv., part ii., of "Physiological Therapeutics") there is about sixty-two per cent. of possible sunshine. Such a climate is more or less enervating, but in itself not unhealthy. A strict quarantine is exercised against the importation of yellow fever, of which several epidemics have in former years occurred. The amount of water about the city would appear to be favorable for the propagation of the mosquito, and hence malaria must be frequent.

There are several resorts on the gulf coast at not a great distance from New Orleans, which are frequented both in summer and in winter. Indeed, the entire route from New Orleans to Mobile along the Gulf is very attractive. Pass Christian on this line has a mild winter climate, favorable for persons suffering from bronchial disease, from malaria, or from Bright's disease, for convalescents from some acute disease, and for those of feeble vitality. It possesses a good hotel, cottages, and boarding-houses. The sanitary conditions are good; there is pure artesian well water; the soil is dry and porous; and extensive pine forests lie immediately in the rear of the town. The average mean winter temperature is given by Solly as 70° F. There are opportunities for driving, boating, fishing, and hunting.

Covington, thirty miles to the north of New Orleans, reached by a picturesque journey across Lake Pontchartrain and up the Tchefuncta River, situated in the midst of pine woods, is said to have a very salubrious winter climate, with a "soft air," and is sheltered from all "Northerners." It is considered by some local physicians to be favorable for pulmonary diseases.

Bay St. Louis is another resort frequented by the New Orleans Creoles, and said to be rapidly growing in favor with winter visitors. Biloxi, Beauvoir, Ocean Springs, and Long Beach are other resorts on the Gulf coast.

For those seeking rest and diversion the trip down the Mississippi River can be recommended, and from personal experience the writer can testify to its charm and variety. The portion from Baton Rouge to New Orleans along the sugar plantations is of especial delight and interest to the Northern traveller. Below New Orleans, through the "delta country" to the jetties and the Gulf, the voyage is also one of great interest.

New Orleans can be reached from the north by various lines of railroads, and steamers with good accommodations run directly there from New York, occupying about five days on the voyage.

New Orleans is a convenient port of departure for Central America and the West Indies.

Edward O. Otis.

NEWPORT NEWS. See *Old Point Comfort.*

NEWPORT, R. I.—Newport, until very recently one of the capitals of Rhode Island, and in some respects probably the most celebrated of American health resorts, occupies the isthmus and much of the remainder of a peninsula which forms the southwestern termination of the island of Aquidneck or Rhode Island. This island, lying in the middle of the lower portion of Narragansett Bay, is entirely exposed at its southern end to the full sweep of the Atlantic billows, so that Newport, although partly sheltered by the land, partakes in a measure of the climate of the neighboring oceanic islands of Block Island, Martha's Vineyard, and Nantucket. Newport is the seat of the Naval War College, of the United States Torpedo Station, and of the large military post of Fort Adams, at the entrance to the harbor. It has a resident population of 23,000, increased in summer by nine or ten thousand, contains public buildings, many churches, banks, schools, shops of all kinds, an opera house, excellent libraries, the Newport Casino, and an admirably equipped institution, the Newport Hospital; it is also the home of numerous societies, clubs, and associations. It is lighted by gas and electricity and has an electric street railway, running north and south with a branch line to the beach.

The old town, settled in 1639, and built chiefly on the western slopes of a broad and elevated ridge rising directly from the harbor, still retains much of the aspect of colonial days, and in its narrow streets and ancient buildings, of which, in spite of the increasing encroachments of modern civilization, many replete with historic associations are still standing, presents the features of an old New England seaport town and contrasts vividly with the newer suburbs by which it is surrounded. The summer homes are constantly extending until they have already taken up a considerable part of the peninsula. Bellevue Avenue, a modern extension of one of the main city thoroughfares, Touro Street, has been continued due south as far as the ocean, and forms a wide and splendid highway two and a half miles in length, on each side of which are placed the stately houses and beautifully kept grounds of the wealthier summer residents.

The natural features of Newport and vicinity are very attractive. Bishop Berkeley justly described the island to his friends as "pleasantly laid out in hills and vales and rising grounds, and hath plenty of excellent springs, and fine rivulets and many delightful landscapes of rocks, and promontories and adjacent lands." On the one side, the waters of the land-locked harbor and Narragansett Bay studded with islands offer numerous inducements to the lovers of sailing, boating, and fishing. On the other, the ocean is quickly reached at the First or Easton's Beach, at a point where the coast line of the island turns sharply to the east. This beach, seven-eighths of a mile in length, lies in a sheltered bay and in the season is crowded with bathers. Hot salt baths are provided there in summer. Further to the east, beyond Easton's Point, lies the longer, Second or Sachuset Beach, and still farther, facing the east passage of Narragansett Bay, is the Third Beach. Besides these, the principal beaches, the shore near Newport presents a very varied and irregular outline. One of the most striking parts is "The Cliffs" which may be said to extend from the west end of the bathing beach to the end of Bellevue Avenue, for nearly three miles. The public walk along these cliffs through the grounds of some of the finest places constitutes one of Newport's greatest attractions. Of the various drives, the "Ocean drive" from the southern end of Bellevue Avenue, westward along the shore, is justly celebrated. The interior of the island, traversed by two main thoroughfares, the East and West roads, and numerous cross roads, presents a pleasing diversity of hill and dale with charming views of the bay and ocean, and there are many peaceful woodland lanes bordered with dense shrubbery, which remain quite secluded even in summer.

The geological formation underlying Newport and its vicinity is somewhat complex, and consists mainly of various rocks of the carboniferous period. Newport Neck, as the extreme southwestern corner of the island is called, consists of pre-carboniferous rocks, supposed to be partly of igneous origin. In the middle portion of the Neck a conspicuous reddish granite (protogine) is to be observed. On this part of the island the rocks are largely exposed, and are grouped in picturesque masses. The Paradise Rocks back of the second beach offer interesting features to geologists by whom they have been frequently studied. Many of the rocks about Newport have undergone metamorphic processes, and have also been greatly disturbed, and in many cases bent and folded, besides having been eroded by glacial action. There are several large ponds in the vicinity of the city.

The soil under the city proper is a tenacious clay, beneath which frequently occurs a stratum of water-bearing gravel. Most of the wells in the compact quarter of the city receive their supply from this gravel and are for the most part dangerous from liability to contamination from deep cesspools dug through the clay.

The climate of Newport is less trying and more equable than that of most other places on the New England coast. Although snow and ice are far from infrequent, yet the winters are milder and the daily thermometric range is less than in New York, Providence, and Boston. Owing to the influence of the ocean, the spring is rather more