

long and rise from the bottom of the lake upward and above the surface. In the centre of these columnar pillars are small holes through which flows this sweet water. In Mono Lake we find several islands, some of them two or three miles in length. Their composition is of volcanic material, and all over the surface are hot springs and jets of hot steam, making the surrounding water quite warm. On several of these little islands are small craters, fifty or more feet in diameter. They are now filled with water. All around Mono Lake are unmistakable evidences of great volcanic activity during the tertiary and post-tertiary periods, and there are the best of reasons for believing that the lake itself is a large extinct crater. The water, being likened to the Dead Sea, was supposed to be destitute of life. There are found, however, numerous worm-like minute organisms, plainly visible to the naked eye in the water near the surface. The larvæ of these animals are thrown upon the shores of the lake by the waves, and there accumulate in large quantities. The fact that snow-capped mountains surround Mono Lake lends a grand and impressive character to its scenery. To the taste the water is more like a bitter brine than a mineral water. The action of the water, even when it is taken in small quantities, is exceedingly diuretic. Several analyses of this water have been made. The following one by Dr. Winslow Anderson is, perhaps, the most complete and comprehensive:

ONE UNITED STATES GALLON CONTAINS:	
Solids.	Grains.
Sodium chloride	795.24
Sodium carbonate	26.40
Sodium sulphate	17.10
Sodium phosphate	5.98
Potassium chloride	281.17
Potassium carbonate	10.60
Potassium phosphate	3.05
Magnesium chloride	365.60
Magnesium carbonate	9.45
Magnesium sulphate	127.50
Calcium chloride	1,073.55
Calcium carbonate	32.76
Calcium sulphide	Trace.
Calcium sulphate	57.07
Ferrous carbonate	7.14
Alumina	26.83
Borates	19.75
Silicates	9.62
Organic matter	24.60
Total solids	2,915.16
Gases.	
	Cu. in.
Free carbonic-acid gas	17.16
Free sulphureted hydrogen	.62
Temperature of water, 63° to 80° F.	

The composition will probably vary somewhat in different localities, being influenced by the proximity of the various springs. *James K. Crook.*

MONO-PHENETIDIN CITRIC ACID, apolysin, C₈H₉-OC₂H₅.NH.CO.C₆H₄.OH, is a citro-phenetidin which differs from phenacetin in the substitution of the citric for the acetic acid radical, and from citrophen, which is a triphenetidin citrate, in that only one-third of the acidity of the citric acid is satisfied. It is a light yellowish or whitish crystalline powder of acid reaction, and is soluble in fifty-five parts of cold water, its own weight of boiling water, and in alcohol, glycerin, and strong nitric and sulphuric acids. Nencki, Jaworski, Seifert, Louis Fischer, and others testify to the valuable antipyretic and analgesic effects of the drug, and Cerna reports its comparative lack of toxicity among the phenetidin compounds. Cerna's investigations show that medium doses have no effect on the circulation, while large quantities reduce blood pressure by cardiac depression. Respiration is stimulated. Forty-five grains in small doses administered intravenously to a ten-pound dog produced failure of circulation and respiration, cyanosis, and death. For influenza, migraine, neuralgia, neuritis, etc., it may be used as an analgesic and sedative, in acute rheumatism as a sedative and antipyretic, and in tuberculosis and

other fevers as an antipyretic. Dose 0.3 to 2 gm. (gr. v.-xxx.). *W. A. Bastedo.*

MONSTERS. See *Teratology.*

MONTEBELLO SPRINGS.—(Formerly Newbury Springs.) Orange County, Vermont.

Post-Office.—Newbury. Hotels.

Access.—Via Boston and Maine Railroad, Passumpsic division. These springs are located in the midst of pleasing and picturesque scenery in the northern Connecticut valley. From no other point does the White Mountain range present more majestic and impressive views than from "Montebello," or Beautiful Mountain, and from no other point on the river are more varied, extensive, and charming valley and meadow landscapes visible to the eye. Two springs are mentioned in the geological reports, but it appears that only one is developed. The water was analyzed by Professor Hall about 1866 with the following result:

ONE UNITED STATES GALLON CONTAINS:	
Solids.	Grains.
Sodium carbonate	0.40
Magnesium carbonate	.24
Calcium carbonate	17.60
Potassium nitrate	.40
Sodium sulphate	.24
Iron phosphate	.40
Sodium chloride	.32
Sodium sulphide	.32
Iron oxide	Trace.
Insoluble silica	8.80
Organic matter and ammonia	.24
Loss	8.64
Total	37.60

This analysis presents a mild alkaline-calcic water. It ought to possess diuretic and light antacid properties, besides being somewhat tonic. It has long been resorted to, especially for the treatment of rheumatism and cutaneous diseases. Excellent bathing facilities are provided for guests. *James K. Crook.*

MONTE CARLO AND MONACO.—These two promontories separated by the little plain of La Condamine, occupy one of the most beautiful positions on the Riviera. Monte Carlo, the more important of the two, is a small town of about 3,800 inhabitants, but is said to have upward of 1,000,000 visitors yearly; the larger number being attracted by the "Casino," the notorious gambling palace. From Nice on the one side Monte Carlo is only nine miles distant, and from Mentone on the other, six miles. The general climatic characteristics are essentially the same as those of Nice and Mentone, and the reader is referred to the articles upon these places in the HANDBOOK for meteorological data. The mean winter temperature is 48° F., and the rainfall and proportion of sunny days to cloudy ones is about the same as at Nice and Mentone. Every writer emphasizes the beauty and attractiveness of this region, and the present writer from personal acquaintance heartily confirms this opinion.

Monte Carlo is considered one of the warmest winter stations on the Mediterranean coast, and is well protected from the cold winds, this being particularly true of the little plain of the Condamine lying on the harbor and bay of Monaco. The northwest portion of this quarter is protected by the rock of Monaco to the west and southwest, and by the high mountains, which approach within a short distance of the sea, to the north and northwest. Also on the opposite side of Monte Carlo good protection is afforded from the cold winds. The sea bathing is excellent, and the accommodations are abundant and good, but perhaps rather more expensive than some of the other Riviera resorts. Naturally, Monte Carlo is one of the best winter stations on the coast, but the moral atmosphere of the place, on account of its unenviable reputation as a gambling resort, is hardly conducive to the well-being of an invalid.

Although the situation of Monte Carlo is one of great

natural beauty, art has done much to add to the attractiveness of the place. In corroboration of the truth of this statement I have only to point to the beautiful gardens in front of the "Casino," in which gardens are to be seen many exotic trees and plants. The excursions round about are many and varied; the most beautiful of all being the one to La Turbie and the walks from that point. La Turbie is 1,594 feet above sea level, and is reached in twenty minutes by a mountain railway

great; the roads are good and the drives most attractive, while boating, bathing, and fishing can be enjoyed in the bay. The Hotel Del Monte is a vast structure attractively situated in a great park of several thousand acres with lawns, flower gardens, and groves of various trees, and it affords excellent accommodations.

For those desiring rest in a sedative, mild, equable climate, amidst beautiful scenery of sea and land, Monterey offers an ideal retreat. It is said to be "an excellent



FIG. 3362.—General View of the Principality of Monaco.

from Monte Carlo. The views both in the ascent and at the summit are superb, and from La Turbie one can see the famous Corniche road in either direction.

The maladies for which one seeks the resort of Monte Carlo are such as are benefited at the other Riviera stations, such in brief as require a mild sunny winter climate. The malady of gambling, however, is likely to meet with a fatal issue at this resort where

"Every prospect pleases,
And only man is vile."

Edward O. Otis.

MONTEREY, CALIFORNIA.—This old Spanish settlement is one hundred and twenty-five miles south of San Francisco by rail, and is situated on a peninsula which forms one of the sides of the Bay of Monterey, Santa Cruz forming the other. The climate is moist, equable, and mild, and outdoor life can be enjoyed throughout the year. The annual mean temperature (Solly's "Medical Climatology") is 56° F.; maximum, 88° F.; minimum, 26° F. The mean temperature for January is 50° F. and for July, 65° F. The mean annual rainfall is 14.4 inches. Fogs are more or less prevalent.

The scenic attractions at and about Monterey are very

place" (Hinsdale "A System of Physiologic Therapeutics," vol. iv., Book II, "Climatology") "for the relief of insomnia and for building up the *neurasthenic*." It is obviously not so well suited for the consumptive on account of its dampness. *Edward O. Otis.*

MONTESANO SPRINGS.—Jefferson County, Missouri.

Post-Office.—Sulphur Springs Landing. Hotel.

Access.—From St. Louis via St. Louis and Iron Mountain Railroad, twenty miles south; also by steamers on the Mississippi River. The springs are situated in a broken but picturesque region, about 600 feet above the sea level. They are twelve in number. The flow of water is estimated at from 1,500 to 3,000 gallons per hour.

The waters are laxative, and also possess alterative properties. Their continued use in small doses produces favorable results in cases of chronic constipation and dyspepsia, and in disorders of the blood, liver, and kidneys. The accommodations for visitors are limited as yet, consisting of a small hotel and a few private houses where boarders are taken. The water is shipped from the springs in pint, quart, and half-gallon bottles. A peculiar creamy substance, the natural product of one of the springs, is also used commercially. It has not been

analyzed, but is said to be highly efficacious as a local application to old sores, ulcers, or raw surfaces of any kind.

The following analyses of the two principal springs were made by Messrs. Potter and Riggs, of the Washington University:

ONE UNITED STATES GALLON CONTAINS:		
Solids.	Montesano Spring. Grains.	Casco Spring. Grains.
Calcium carbonate.....	71.45	69.97
Magnesium carbonate.....	14.05	15.50
Calcium sulphate.....	32.37	33.93
Iron and alumina.....	.87	.75
Sodium hyposulphite.....	.74	.65
Calcium phosphate.....	Trace.	Trace.
Sodium sulphide.....	.34	.43
Sodium chloride.....	395.11	368.21
Potassium chloride.....	16.37	16.99
Magnesium chloride.....	35.91	34.41
Magnesium bromide.....	Trace.	.11
Magnesium iodide.....	.85	.67
Silica.....	.51	.67
Total.....	538.57	541.02
Gases.	Cubic inches.	Cubic inches.
Carbonic acid.....	46.43	43.20
Sulphureted hydrogen.....	1.40	1.60

Other springs at Montesano are the "Council," "Alton," "Pearl," and "Thorne" Springs.

James K. Crook.

MONTGOMERY WHITE SULPHUR SPRINGS.—Montgomery County, Virginia.

Post-Office.—Montgomery Springs. Hotel and cottages.

ACCESS.—Via Norfolk and Western Railroad to Big Tunnel Station, thence by a narrow-gauge branch railroad direct to the reception house on the springs lawn.

This attractive summer resort is located in the Alleghany Mountains, at a level of over 2,000 feet above the tide-water. It is surrounded by the pleasing features which render the old Virginia mountain resort famous. The high elevation, cool and invigorating atmosphere, delightful scenery, romantic walks, and picturesque drives, together with an excellent and well-kept hotel, serve to make the Montgomery Springs a very desirable point both for the tourist in search of recreation or diversion and for the invalid who seeks to restore his health. Among the objects of interest in the neighborhood may be mentioned the Dudley Cascade, having a fall of ninety feet over a rugged cliff of solid rock. The falls are two and one-half miles from the springs and are reached by a lovely drive over a well-graded road along the banks of the Roanoke River. Twenty-one miles distant is the celebrated mountain lake, the next highest point in Virginia, having an elevation of more than 4,800 feet.

The waters of the springs issue from three bold sulphur fountains, and from a chalybeate and a freestone spring.

They are gathered in handsome marble reservoirs surrounded by tasteful pavilions. Suitable arrangements for warm and cold sulphur baths are provided. A complete analysis of the water is wanting, but we have secured the following facts regarding their medicinal uses. The White Sulphur water contains sulphates and chlorides, the principal ingredients being the sulphates of sodium, calcium, magnesium, and manganese, with a considerable proportion of sulphureted hydrogen gas. It is used with much benefit in disorders of the liver and skin. It acts also upon the system as a mild laxative, a diuretic, and a diaphoretic. The water tends to relieve portal congestion and diminishes abdominal plethora. It is recommended by physicians in malarial affections of the spleen and liver, in rheumatism and gout, in incipient tuberculosis, and in chronic metallic poisoning. The chalybeate water contains a large percentage of carbonate of iron, and also the carbonates of magnesia, lime, lithia, and manganese, and a number of sulphates. It is used with much advantage in chlorosis, amenorrhœa, albuminuria, dyspepsia, and chronic diarrhœa, and other disorders. The average temperature of the water is about 50° F.

James K. Crook.

MONTREAL, CANADA.—Montreal (Latitude 45° 30' N.; Longitude, 4 h. 54 m. W.), the commercial metropolis of Canada, with a population, including its suburbs, of 350,000, is picturesquely situated at the head of the ocean navigation of the St. Lawrence River, here nearly two miles wide. The city is built on a series of natural terraces which rise from the river's edge till they culminate abruptly in Mount Royal, a volcanic hill 750 feet high about two miles northwest of that portion of the river termed the harbor.

The buildings are, for the most part, well constructed of limestone and brick, and while cool in summer are rendered by their double windows and doors warm and comfortable in winter.

The soil on which the city is built is composed of a series of marine clays and sand with some gravel terraces. While some of the streets in the lower portion of the city are narrow and ill-paved, all the more important thoroughfares are broad, well-paved, drained, and lighted and are kept cleanly; those in the upper part of the city are lined on each side with shade trees which in summer add much both to their appearance and to their pleasantness. The city is well supplied with water drawn from the St. Lawrence River. This water, except during the time of the spring floods and after heavy autumn rains, has a very slight tinge of color and contains only a small amount of solid matter, not more than from eighty to one hundred parts per million, with chlorides from one to two and one-half parts per million; its total bacteriological content is from 120 to 240 per cubic centimetre. Montreal has an excellent street railway; its parks are numerous; the largest, comprising over three hundred acres, occupies the greater portion of the sides and top of the mountain and is well laid out with carriage drives and bridle and foot-paths.

Montreal is one of the most important educational centres in Canada; it possesses two well-equipped universities: one English, which is Protestant but undenominational,

MEAN FOR TEN YEARS, 1890-99.

Month.	THERMOMETER. (DEGREES FAHRENHEIT.)			Mean relative humidity.	Per cent. possible bright sunshine.	Inches of rain.	Number of days on which rain fell.	Inches of snow.	Number of days on which snow fell.	Inches of rain and melted snow.	Number of days on which rain and snow fell.	Number of days on which rain or snow fell.
	Max. min.	Min. min.	Mean daily range.									
January.....	42.37	-17.58	15.24	84.07	36.63	0.9	4.3	28.41	18.7	3.72	2.5	20.5
February.....	41.66	-13.02	15.03	82.97	43.27	.69	3.2	23.32	15.1	2.98	1.9	16.9
March.....	46.6	-1.29	13.96	77.81	47.99	1.53	7.6	18.94	11.7	3.68	3.2	16.1
April.....	70.07	17.05	16.96	67.16	51.78	1.7	11.4	3.56	3.7	2.05	1.4	14.2
May.....	80.49	33.97	18.25	68.14	49.59	2.98	16.6	.....	.....	2.98	.....	16.6
June.....	85.95	46.19	17.39	71.71	32.94	4.1	15.6	.....	.....	3.94	.....	17.6
July.....	88.54	50.56	17.06	72.59	59.96	3.94	17.6	.....	.....	4.25	.....	16.9
August.....	86.04	48.26	16.13	74.47	56.41	4.25	16.9	.....	.....	4.25	.....	17.6
September.....	82.21	37.43	15.8	76.94	53.15	3.14	14.8	.....	.....	3.14	.....	14.8
October.....	70.7	27.71	13.52	77.27	40.68	2.45	14.9	2.5	1.6	2.48	1.0	15.5
November.....	56.46	9.01	12.63	80.13	28.87	2.13	11.1	10.68	9.7	3.24	2.8	17.9
December.....	45.91	-8.64	14.19	84.22	32.88	1.46	5.5	22.68	16.6	3.29	2.2	19.9

tional, the other French and under the control of the Roman Catholic Church. There are also numerous public and private schools, in both languages, of a high order of excellence. There are a public library, an art gallery, and several very fine private collections of paintings.

The flora of the district is a very rich one and comprises not less than one thousand species of flowering plants. Several kinds of elm, maple, ash, and birch flourish in the district; also the oak, beech, butternut, poplar, willow, and lime trees.

The St. Lawrence River runs in a northeasterly direction through a broad alluvial plain, bounded on the north by the Laurentides, a range of undulating hills from one to two thousand feet high, composed chiefly of metamorphic rocks and holding in their valleys numberless small lakes and watercourses. Bounding this plain on the south are the northern spurs of the Adirondacks, the Green Mountains, and the Appalachians. Toward the centre of it rise several isolated hills of volcanic origin from five hundred to eight hundred feet high, composed chiefly of trap rock, their sides and summits for the most part well wooded. Four miles above Montreal the river tumbles in a series of small cataracts over a rocky ledge forming the "Lachine Rapids," and still farther up, at a distance of about nine miles, it widens into Lake St. Louis, six miles broad.

In Montreal and its neighborhood winter as a rule is most enjoyable and healthful. Snow falls about the latter half of November, and generally remains until the later weeks of March; only occasionally during all these months does a thaw occur for a few days. The air is dry and cold, but the cold is rarely extreme, and, owing to the dryness of the air, is quite endurable. The sunshine is bright, and there is an absence of high winds. During the bright and starlit nights outdoor sports of all kinds may be enjoyed; of these the most notable are sleighing, snow-shoeing, skating, skiing, and tobogganing. In spring the melting snow in the streets, with the accumulated dirt of the winter, is apt to render the last two weeks in March and the first two weeks in April decidedly insalubrious. Bright, warm weather generally sets in with the first week of May. The summer is warm and dry, but showers are sufficiently frequent to maintain the general verdure. The heat of the day is followed by an evening and night always sufficiently cool to permit of restful sleep. The autumn is bright, cool, and invigorating. The accompanying tables present the average meteorological data for the past ten years.

Montreal has connections by rail with all the important points on the continent, and is the terminal port of the Canadian steamship service to Europe, and of the several steamship lines which connect it with the summer resorts on the upper and lower St. Lawrence, the Gulf, the Lower Provinces, and Newfoundland.

Alexander D. Blackader.

MONTREUX.—The village of Montreux, in the Canton de Vaud, Switzerland, lies at the northeast corner of the Lake of Geneva (Latitude 46° 25' 59" N., Longitude

6° 55' E.), directly opposite the opening of the Rhone Valley. Beside Montreux proper some twenty other villages and hamlets, lying close together at this point, are included in the district, or parish, bearing the same name; and it is all these places taken collectively which constitute the health station of Montreux. Of the other villages comprised within the district, Les Bassets, Clarend, Vernex, Territet, and Chillon are perhaps those most widely known. Glion, 1,000 feet above Montreux, and Les Avants, about 2,000 feet above Montreux, are also well-known health stations. The elevation of Montreux itself above sea level is 1,220 feet. The chief climatic characteristics of this district are its immunity from cold winds and the prevailing stillness of its atmosphere, both of which are due to the very exceptional degree of shelter afforded by the mountains which stand back of the district to the north and east. Montreux itself is the most sheltered of all the group of contiguous villages. "The indentation of the lake, which is here called the Bay of Montreux, is protected by the mountains around from the north and east winds, and in some degree from the northwest wind, so that it is said to be, with the exception of Bex, the most sheltered place in Switzerland. It is also the hottest of all the Swiss stations north of the Alps except Sion, but that applies only to the summer and spring, as Montreux is warmer than Sion in autumn and winter. The 'bise'—the cold northeast wind—is not nearly so much felt at Montreux as at Geneva and Morges; and it has been noticed, during the prevalence of a 'bise,' that it has been intensely cold at Geneva (temperature 14.3° F.) and at Morges (temperature 18° F.), while at Montreux (temperature 23.6° F.) the air has been almost calm and not disagreeably cold. There are also less variations of temperature at Montreux—a smaller range between the maxima and minima" (Dr. J. Burney Yeo, "Climate and Health Resorts"). To the "föhn" wind blowing up from the south, down the Rhone Valley, Montreux is much exposed. Dr. Yeo tells us that at Montreux "the air is very calm and still, the number of calm days reaching eighty-five to ninety per cent., whereas at Morges it only reaches thirty-three per cent., and it has been noticed that the lake is often calm from Vevey to Villeneuve, when it is agitated in the rest of its extent. But when the hot wind blows from the south, the föhn, here called the *vandaire*, . . . makes the bay of Montreux very rough." The winter temperature of Montreux is moderately cold. Dr. Kisch, in Eulenburg's "Real-Encyclopædie," gives the following figures for the mean temperature of each of the seven months from October to April: October, 50.9° F.; November, 41.2° F.; December, 36.5° F.; January, 33.4° F.; February, 39° F.; March, 41° F.; April, 50.7° F. The mean temperature at the hours of 7 A.M., 1 P.M., and 7 P.M., in each of the four seasons, and in each of the seven colder months of the year; the mean temperature of the winter, of the spring, and of the year; and the mean and absolute maximum and minimum temperatures, all of them derived from seven years of observation, are given by Dr. Yeo, and are quoted below: