

would enable one to exclude blisters arising from slight injuries. More difficulty, however, would be encountered in differentiating the affection when seen on the lateral surfaces of the fingers and on the backs of the hands. Here the affection bears a close resemblance to eczema; but in eczema there are more extensive inflammation and less tendency to the formation of bullæ, and in eczema the outer wall of the lesions easily ruptures, giving rise to excoriated itching surfaces of irregular outline. In pompholyx, on the other hand, the epidermic wall seldom ruptures and the lesions remain circumscribed, or coalesce in such a manner as to form bullæ. Furthermore, it should be borne in mind that pompholyx is most liable to occur in adults, and especially in women who are debilitated or who have been overwrought, and that the disease tends to a spontaneous recovery, and at the same time is likely to recur upon the recurrence of conditions favorable to its development. Ivy poisoning must likewise be excluded in making a diagnosis, but the acute inflammatory character of this disease and the tendency of the eruption to appear on other parts, render it, as a rule, easy to distinguish it from pompholyx. The last doubts, however, would be removed if the history of an exposure to the poisonous plant could be obtained in addition.

**PROGNOSIS.**—The prognosis in pompholyx is good so far as the individual attack is concerned, although there is a tendency for the disease to return with successive years. In some instances the irritation to which pompholyx gives rise has engendered an eczema which may persist indefinitely. On the other hand, the disease may not return for several years, although, upon the return of ill health, it will be very likely to appear again.

**TREATMENT.**—The treatment should be partly constitutional or general and partly local. The former seems to be of the more importance, as the individual attack is self-limited. First, all debilitating influences should be removed, and as far as possible the patient should be urged to avoid worry, over-excitement, or intense mental labor. General hygienic measures should be advocated, namely, exercise in the open air, cold bathing with vigorous friction immediately thereafter, and diversions of a relaxing nature. Change of location from inland to the seashore, or from the seashore to the mountains, is in some cases highly beneficial. In addition to this the patient should be given a generous diet and in some instances tonics, and the room which he occupies should have a sunny exposure and should be well ventilated. Aside from these general measures individual cases should be treated according to the indications present. Strychnine is a drug which must frequently be called into requisition. Iron, especially in its more assimilable forms, quinine, cod-liver oil, and in some instances arsenic, are valuable drugs.

The local treatment consists partly in soothing applications and partly in such as protect the surface from the air and from the irritation of clothing and other extraneous substances. It is best forcibly to rupture the lesions, especially when large, and flush out the cavity with a saturated solution of boric acid and water. In some cases, when the lesions rupture, black wash may be used. I can also recommend the following application: Salicylic acid 2 per cent., and diachylon ointment q. s. 100 per cent. This should be spread on some firm white cloth and kept constantly applied to the diseased area. Every twenty-four hours the surface of the skin should be cleansed with a saturated solution of boric acid, or with water to which a small quantity of carbolic acid has been added, and a fresh application of the ointment should be made. This ointment is especially valuable when the soles of the feet are involved. Stelwagon<sup>4</sup> recommends the following: Menthol, gr. ij.; acidi salicylici, gr. x.; emplastri plumbi, emplastri saponis, ãã  $\frac{3}{4}$  iss.; petrolati,  $\frac{3}{4}$  v. M. The prevention of local infection is one of the main objects in treatment, and, to accomplish this, we may with benefit apply a solution of corrosive sublimate (1 to 2,000) or white precipitate oint-

ment (five per cent.), the latter serving as a parasiticide as well as a protective agent.

William Thomas Corlett.

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**PONCE DE LEON SPRINGS.**—Crawford County, Pennsylvania. POST-OFFICE—Meadville. ACCESS.—Via Erie Railroad or by Pittsburg, She-nango and Lake Erie Railroad to Meadville (separate depots), thence about two miles to springs.

The Ponce de Leon Springs may be said to be in a process of development. An electric line of railway from Meadville is now being constructed, and a modern first-class hotel will soon be built. The location is very favorable for a pleasant summer resort, being twelve hundred feet above the sea-level and surrounded by picturesque hills. There are six mineral springs, only one of which has been submitted to a qualitative examination. An analysis by Prof. Henry Leffmann, of Philadelphia, resulted as follows: One United States gallon contains: Sodium sulphate, gr. 0.17; sodium chloride, gr. 0.90; calcium bicarbonate, gr. 1.89; magnesium bicarbonate, gr. 0.47; sodium bicarbonate, gr. 16.73; silica, gr. 0.70. Total, 20.86 grains.

A second analysis by J. Singley, Ph.D., professor of chemistry in the Western Pennsylvania Medical College of Pittsburg, resulted substantially as above. The following gases were also found: Carbonic acid, 1.33 cubic inches per gallon; oxygen and nitrogen, 7.23 cubic inches per gallon; hydrogen sulphide, abundant traces.

The water is a bland antacid and diuretic. It will be found of value in certain stages of Bright's disease, especially when the urine is scanty, high-colored, and irritating. It is also useful in assisting the diminution of calcareous deposits and of uric acid in gout and gravel. The water will speedily relieve acidity of the stomach and heartburn. It is used commercially, and also for the manufacture of a number of temperance beverages.

James K. Crook.

**PONS AND MEDULLA.** See various articles under Brain.

**PONTRESINA.** See Engadine.

**POPLAR.** See Willow.

**POPPY.**—The principal products of the poppy plant will be found described under the titles of opium and its more important alkaloids. Some minor products are here considered.

**Poppy Capsules (Papaveris capsula; Fructus or Capita Papaveris immatura)** are more or less employed in medicine for the opium which they contain. Their botanical origin has been fully stated under Opium. For the purposes here considered, they are gathered when nearly ripe and are dried in the sun. They are more or less spheroidal, but vary in the different varieties, from strongly oblate to strongly prolate, and they range from one and one-half to three inches in diameter. The larger ones, and those of prolate form, known as the "black" variety, are generally regarded as superior. The color is pale brown, and the surface nearly smooth. At the summit there are from eight to sixteen, or occasionally twenty short, nearly sessile, recurved stigmas, indicating an equal number of placenta, the latter projecting as sharp ridges upon the inside of the capsule. Partly concealed under the stigmas are a circle of small pores through which the mature seeds escape. The seeds are not a part of the capsule considered as a drug. Numerous constituents have been reported as occurring in these capsules, but from a medicinal point of view they may be regarded as identical with those of opium. The morphine content

\* Reduced from grains per imperial gallon.

rarely exceeds a fourth of one per cent., notwithstanding that claims for a much larger yield have been made. The younger the pods the less morphine do they contain.

Poppy capsules were official in the United States Pharmacopœia of 1870, and are still so in the British Pharmacopœia, but their use in the United States has almost entirely given place to that of other and more definite forms and preparations of opium. In Great Britain the syrup is probably the most largely used preparation, and is mostly administered to children, though the extract is also considerably employed. The dose of any preparation should represent from one to two drachms of the capsule.

Poppy seeds possess no narcotic properties whatever, though it is said that traces of morphine can be found in them. They are used purely for their fixed oil, which is an important article of commerce. The oil is quite bland and possesses only the nutritive and demulcent properties of vegetable fixed oils in general.

**Poppy Petals, or Red Poppy Petals (Rheadas Petala)** are the petals of *Papaver Rheas* L., the common red or field poppy of Europe. They resemble rose petals, but are larger. The color of the fresh petals is a brilliant scarlet red, with a large black spot at the base, but the color becomes pale and dull in drying. They are used entirely for their coloring matter, for the tinting of pharmaceutical preparations, and hence are greatly preferred in the fresh condition. The coloring matter is divisible into two portions: *rheadic acid*, which is dark red, soluble in both water and alcohol; and *papaveric acid*, which is of a brilliant red, soluble in water but not in alcohol. An alkaloid (*rheadine*) exists in very small amount, but is unimportant. It is said that a trace of morphine has been extracted, but the article can scarcely be regarded as medicinal.



FIG. 3876.—Case of Porokeratosis of Five Years' Standing. The affected area is bounded by the characteristic rifted ridge. The lesion shown here was the only one present in this case. (From Grover W. Wende's collection of photographs of skin diseases.)

**POROKERATOSIS.**—(Synonyms: Hyperkeratosis eccentrica, Keratoderma eccentrica, Hyperkeratosis figurata centrifuga atrophicans, Porokeratose.)

**DEFINITION.**—A unique form of hyperkeratosis, beginning as a small papule. This papule having slowly enlarged becomes depressed at the centre, and its margin usually develops into a ridge involving a rift and defining an area of varying extent.

In 1887 Maiocchi reported a case, marked by a singular appearance of the skin, which he diagnosed as a form of ichthyosis hystrix. After a lapse of six years the same case was brought to the notice of Mibelli, who pronounced the lesion exceptional and peculiar, claimed that the pathological process was distinctive, and finally characterized the affection by the name of porokeratosis. Simultaneously with the observation by Mibelli, an article was published by Respighi describing a number of similar cases under the name of hyperkeratosis eccentrica. The disease has been especially observed in Italy, particularly in the district of Parma. Cases occurring in the United States have been reported by Hutchins, Gilchrist, and Wende. A few cases have been noted in Germany, France and, very recently, in England.

**SYMPTOMS.**—The disease is of slow development, first

appearing as a papule of varying size, dirty brown, dry, and invariably surrounded at the base by a collarette of scales. As the papule increases it takes on a decided change. The lesion, the periphery of which is subject to a gradual development, extends centrifugally; the central portion becomes slightly depressed, and the margin resolves itself into a unique border which represents a non-inflammatory hypertrophy, sharply defined against the outlying sound skin, and forming a continuous or broken ridge. In the middle of this ridge is found a rift somewhat irregularly dividing the same into two lateral halves, all of which constitutes a lesion unlike any other known, and which has been characterized as a "seam," "dike," or "wall." It is dirty gray or blackish in color and usually quite pronounced, though in ill-defined cases it may appear simply as a loose rim of epidermis. The

centre, so long as the lesion is small, consists of a horny, thickened, epidermic patch. After the lesion has attained a certain size the centre may become normal in appearance. Sometimes the natural furrows of the skin are erased; again, there is clear evidence of atrophy. The functions of the sweat and sebaceous glands are interrupted. In some areas absence of hair is observed. Epidermic concretions, the size of a millet-seed, are sometimes present, now divided by the furrow, again attached to the inner side of the seam; or they may appear at any point within the affected area.

The areas affected by hyperkeratosis vary in size—many do not measure over one-eighth of an inch in diameter, while some become much larger and may even cover the greater portion of an extremity. As a rule, they do not exceed an inch in diameter, and in the majority of cases they are much smaller.

The lesion is always slow in development; at times the condition remains stationary. The shapes assumed are round, oval, or elliptic; they may become polycyclic by confluence or may all run together, especially when their dimensions are greatly increased.

The lesions often affect the mucous membranes lining the mouth. All or any part of the skin may be attacked. The favorite regions, however, are the face—especially the nose, forehead, and cheeks—the ears and neck, the dorsal surfaces of the hands and feet, and the extensor surface of the forearms.

The lesions of the mouth are generally not very numerous, although present in a large number of cases. They consist of small asymmetrical spots varying from



the size of a pin to that of a lentil. Like the lesions of the skin, they may be oval, polycyclic, or irregular.

The subjective symptoms are without special importance; only occasionally does the patient complain of pruritus, either slight or intense. When the feet are affected the shoes sometimes cause pain by pressure.

The evolution of the lesions is essentially slow; sometimes a single focus continues during many years. Sub-

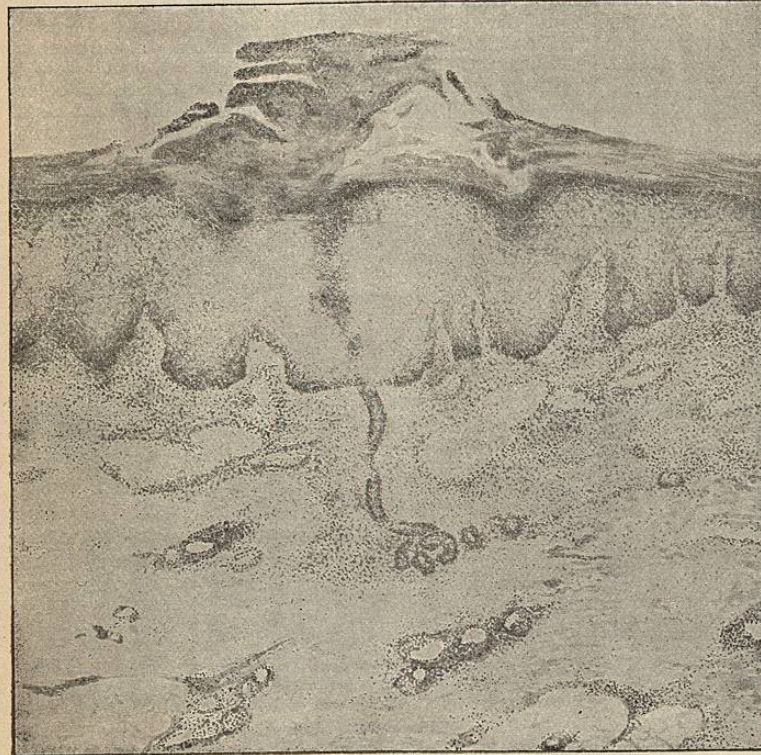


FIG. 3877.—Cross Section of the Characteristic Ridge in a Case of Porokeratosis. In addition to the condition of marked hyperkeratosis, which is revealed in the picture, there may be seen a sweat pore which is obstructed by the presence of a black horny plug that extends down to the level of the acini. (Grover W. Wende.)

sequently the disease extends by the development of new lesions, and, in the end, the lesions are distributed bilaterally.

**ETIOLOGY.**—The cause of the disease is largely a matter of conjecture. It may show hereditary tendencies, though often it does not. The possibility of hereditary transmission is shown in the cases published by Gilchrist, in which eleven members of one family were discovered to be affected in the course of four generations. Respighi also reports an instance of the malady which recurred in several generations. Most of the cases occur in laborers. Males suffer more often than females; sometimes the affection is developed in children between the ages of two and eight; generally, however, it appears in adolescents or adults.

The proof that the affection is parasitic in its nature is wanting, although in a series of four inoculations made upon as many different individuals by Wende, one was successful, undoubtedly owing to local irritation upon a susceptible skin. Respighi made experiments in transplantation, but they proved to be negative. All examinations for micro-organisms have been without result.

**PATHOLOGY.**—The main feature of this disorder is a special form of hyperkeratosis. The elevated and circinate margin is composed of a mass of cornified cells, which however, still retain their nuclei. The lesion forms a conical plug corresponding to the interpapillary

depression into which the enlarged glandular orifices combine, but are obliterated by horny masses—a condition which strongly resembles lichen spinulosus. All parts of the epidermis are involved, especially the lower horny and upper rete layers. A small amount of cellular infiltration with oedema is seen in the papillary layer of the cutis immediately underlying the affected epithelium. The derma undergoes a sclerotic degeneration in the upper layers. At first it is hypertrophied, but in the advanced stage atrophied. The sweat glands are dilated and reveal epithelial proliferation and hyperkeratinization. Epithelial accumulations in the sweat ducts and sebaceous glands, as well as in the hair follicles, have been observed by Mibelli, Respighi, and Gilchrist.

**DIAGNOSIS.**—The clinical characteristics of porokeratosis are so unique that a mistake in diagnosis is not likely to occur. In the early stage the lesions may be mistaken for lichen planus, but this is generally accompanied by itching, is not continuous, and does not attack several members of the same family. The essential lesions are the characteristic papules, striated on the surface, and of a dark red color. There are instances of lichen planus essentially annular, but in that case the rings are limited by a red prominence, and one does not see either the furrow or the edge of the porokeratotic circles so characteristic of the disease.

**PROGNOSIS.**—The disease does not affect the general health, and, beyond the possible disfigurement, need not create any anxiety. Sometimes the lesions disappear spontaneously. When located about the joints, especially of the fingers or feet, the affection may cause some pain from pressure and the interruption of functional operations.

**TREATMENT.**—The same treatment is required as that given to some forms of ichthyosis. The lesions, in the early stages of the disease, are to be removed by salicylic-acid plasters or the use of the curette. Joseph has obtained good results by excision. Gilchrist recommends electrolysis. Both of these modes of treatment were employed in the case illustrating this article, but without favorable results. Undoubtedly this peculiar treatment is applicable only to small lesions.

Grover W. Wende.

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**PORRO OPERATION.** See *Cæsarean Section*.

**PORTER SPRINGS.**—Lumpkin County, Georgia.

**POST-OFFICE.**—Porter Springs, Hotel.

**ACCESS.**—Via tri-weekly hack line from Gainesville,

the springs being twenty-eight miles north of that city, and ten miles north of Dahlenega. They were discovered only a few years ago in a beautiful cove on the southern slope of the Blue Ridge Mountains. The waters have acquired an extensive reputation on account of their valuable chalybeate properties. The hotel has a capacity for about one hundred and fifty guests, and is kept open from June 15th to October 15th.

The situation is very high for this region, being more than three thousand feet above the sea-level, an elevation greater than the top of Lookout Mountain. Some of the peaks in the vicinity reach an altitude of almost five thousand feet. Although located in a semi-tropical latitude, the high elevation of Porter Springs gives the climate an invigorating, bracing character not subject to exhausting heated spells. The waters are said to contain, besides iron, hydrogen sulphide gas with sulphates of magnesia, potassa, and soda. Some of the springs contain also small quantities of iodine, lithia, and manganese. It is unknown by whom these determinations were made. A proper quantitative analysis is needed.

James K. Crook.

**PORTLAND, MAINE.**—The largest city and commercial metropolis of Maine, with a population of about fifty thousand, one hundred and fifteen miles northeast of Boston, is beautifully situated at the head of Casco Bay. Portland is the centre of a number of attractive seaside resorts which are easily reached from this city by sea or land. Such are Old Orchard Beach, Scarborough Beach, Prout's Neck, Kennebunkport, Pine Point, Saco Pool, and Wells Beach to the south; and Boothbay, Harpswell, Islesboro, Isle Au Haut, Vinal Haven, Deer Isle, Camden, and Castine to the northeast. Indeed, the whole coast of Maine with its innumerable indentations and many islands affords a great variety of attractive summer resorts with a cool, delightful climate. It is visited at this season by thousands of people from the inland cities of the North, South, and West. Portland itself and its picturesque surroundings offer very many attractions, and possess a cool summer climate and a steady sea breeze.

There are many fine buildings and churches in the city, a number of parks, notably the Eastern Promenade with a fine view of the city and harbor, and many points of historical interest. The drives are delightful, and excursions by water through the harbor and Casco Bay with its many islands, are numerous and pleasing. Diamond, Peak's, and Cushing Islands are favorite resorts near the city, easily and quickly reached by water. The accommodations, both in Portland and the various other resorts mentioned above, are abundant, good, and of varying prices. The following table represents the climate of Portland and will also convey an idea of the climate of the resorts lying to the north and south. In general,

the summer climate is seen to be a cool marine one, with frequent sea breezes, a majority of pleasant days, and a humidity of about seventy per cent. There are often quite sudden and marked changes in temperature, and fogs are not infrequent. Such a climate is a stimulating one and well suited for the overworked, for neurasthenics, and for those suffering from anaemia, scrofula, and bone and joint tuberculosis. Convalescents from chronic diseases also do well in this climate. It is too damp and variable for laryngeal and pulmonary cases and those subject to neuralgic affections. Especial mention should be made of the exceptionally fine beach at Old Orchard, the finest in New England, extending for a distance of ten miles and affording most excellent surf bathing. This is a very much frequented resort, and offers accommodations of every kind and description. Hinsdale (vol. iv., Book II., "Health Resorts," "Physiological Therapeutics") says that the climate of Kennebunkport is not excelled on the New England coast. "The south and southwest breezes," he says, "are from the water; a hot land breeze is a rarity, and fogs are not of frequent occurrence." He recommends the climate for neurasthenics and those suffering from insomnia and melancholia.

Portland, as well as the various resorts about it, can be easily reached from Boston either by rail or by water. Edward O. Otis.

**PORTLAND, OREGON.**—This is the largest city in the State of Oregon, with a population of 90,428, and is situated at the head of ship navigation on the Willamette River which flows into the Columbia. It is in no sense a health resort, but it is mentioned here, and a climatic chart is given, for the sake of contrasting the climate of the eastern and western sides of the North American continent. By comparing the charts of Portland, Me., and Portland, Ore., the contrast will be seen. "Portland, Ore., lies nearly two degrees farther north than Portland, Me., yet its mean winter temperature is no less than fifteen and one-half degrees warmer than that of its namesake on the Atlantic coast. It is within one degree of being as warm as that of Norfolk, Va., and is about ten degrees warmer than that of New York City. On the other hand, the summer at Portland, Ore., is slightly cooler than at Portland, Me., and is about seven degrees cooler than that of New York City and almost exactly the same as that of Montreal." "The range of temperature is decidedly less at Portland, Ore., than it is at Portland, Me. The rainfall is much greater, and the relative humidity is higher (especially in winter), and the number of cloudy days is much greater. The great cloudiness of the Oregon winter weather is a feature of the climate not characteristic of any other part of the United States except the Lake region and St. Lawrence Valley district" (Richards). Richards (previous edition of the *HANDBOOK*) calls attention to the close resemblance between

**CLIMATE OF PORTLAND, ME., LATITUDE, 43° 39', LONGITUDE, 70° 15'. PERIOD OF OBSERVATION TWELVE YEARS.**

	January.	March.	May.	July.	September.	October.	November.	Spring.	Summer.	Autumn.	Winter.	Year.
Temperature, degrees Fahr.—												
Average mean temperature	29.2°	32.6°	54.8°	69.7°	60.6°	50.4°	38.0°	43.5°	67.2°	49.6°	25.6°	46.5°
Average daily range	15.5	14.2	16.2	16.6	14.4	14.2	13.1					
Mean of warmest	31.9	41.2	64.1	79.	69.5	58.8	46.7					
Mean of coldest	16.1	27.0	47.9	62.4	55.1	44.0	33.6					
Highest or maximum	58.0	65.0	94.0	97.0	94.5	83.0	66.0					
Lowest or minimum	-11.5	-7.0	34.0	51.0	37.0	28.6	-6.0					
Humidity—												
Average mean relative	72.6%	68.4%	64.7%	70.1%	73.6%	70.8%	70.8%	65.3%	70.1%	71.7%	71.8%	69.7%
Precipitation—												
Average in inches	3.22	3.25	2.94	3.52	3.16	3.66	3.85	8.95	10.40	10.67	9.02	39.04
Wind—												
Prevailing direction	N. W.	N. W.	S.	S. W.	S.	S. W.	N. W.	N. W.	S.	S. W.	N. W.	N. W.
Average hourly velocity in miles	7.6	9.1	7.8	6.6	6.7	7.3	8.3	8.5	6.4	7.4	8.0	7.6
Weather—												
Average number clear days	9.7	7.2	8.3	8.6	10.2	8.9	9.1	23.2	27.8	28.2	28.5	107.7
Average number fair days	12.0	11.6	11.8	14.2	11.1	11.5	10.6	34.8	40.2	33.2	35.9	144.1
Average number clear and fair days	21.7	18.8	20.1	22.8	21.3	20.4	19.7	58.0	68.0	61.4	64.4	251.8



CLIMATE OF PORTLAND, OREGON, LATITUDE, 45° 32'; LONGITUDE, 122° 43'. PERIOD OF OBSERVATION, TWELVE YEARS.

	January.	March.	May.	July.	September.	October.	November.	Spring.	Summer.	Autumn.	Winter.	Year.
Temperature, Degrees Fahr.—												
Mean average temperature.....	39.6°	47.3°	56.0°	66.2°	60.9°	53.0°	45.1°	51.5°	64.2°	53.0°	41.0°	52.4°
Average daily range.....	10.8	16.2	20.5	21.9	20.0	14.2	12.3					
Mean of warmest.....	45.2	55.8	67.4	76.8	70.7	59.2	51.4					
Mean of coldest.....	34.4	39.6	46.9	54.9	50.7	45.0	39.1					
Highest or maximum.....	58.0	76.5	86.0	95.5	90.0	79.0	68.0					
Lowest or minimum.....	3.0	25.5	33.0	46.0	39.0	31.0	22.5					
Humidity—												
Mean average relative.....	78.4%	75.9%	64.9%	63.7%	69.2%	77.6%	78.4%	70.3%	65.1%	75.1%	78.7%	72.3%
Precipitation—												
Average in inches.....	7.34	7.27	2.44	.71	1.62	4.95	7.37	13.19	3.34	13.94	23.72	54.18
Wind—												
Prevailing direction.....	S.	S.	N. W.	N. W.	N. W.	S.	S.	S.	N. W.	S.	S.	S.
Average hourly velocity in miles.....	6.0	5.1	4.8	4.7	4.2	4.1	4.5	4.9	4.5	4.3	5.3	4.7
Weather—												
Average number clear days.....	3.4	4.4	5.1	15.3	12.4	7.1	4.7	14.7	37.0	24.2	9.6	85.5
Average number fair days.....	7.0	7.0	9.9	7.4	9.5	9.9	8.8	26.1	26.4	28.2	21.1	111.8
Average number clear and fair days.....	10.4	11.4	15.0	22.7	21.9	17.0	13.5	40.8	63.4	52.4	30.7	187.3

the climatic conditions characteristic of Portland, Ore., and those prevailing along the western coast of the European continent. The temperatures of the Oregon coast, he says, are strongly suggestive of those found throughout northwestern Europe; further, the almost rainless summer with heavy winter rainfall is a feature of climate in which the Oregon coast resembles the Mediterranean basin rather than the more northerly parts of Europe.

Edward O. Otis.

**PORTSMOUTH, N. H., AND ADJACENT RESORTS.**

—This "old town by the sea" is noticed here not only on account of its own attractions, but because in its vicinity are a number of well-known summer marine health resorts: the Isles of Shoals; Rye and Hampton Beaches and Little Boar's Head; York Harbor and Beach; Ogunquit, Passaconaway, Kittery, and Newcastle.

Portsmouth, fifty-seven miles from Boston, is situated a few miles above the mouth of the Piscataqua River, and possesses an excellent harbor. It is the only seaport of New Hampshire, and in the days of wooden ship-building was a very prosperous town, as is evident from the stately mansions still remaining there.

The present population is about ten thousand, and the town presents a quiet, tranquil aspect quite in contrast to its by-gone activity when ships were launched from its yards and were entering and departing from its spacious harbor. The streets are beautifully shaded, and the old residences of the architecture of seventy-five or a hundred years ago, with their attractive gardens, together with the water views from the decaying wharves, all combine to give this old city a most picturesque appearance. There are also many points of historic interest in and about the city, for it was first settled in 1623. On an island opposite, in the town of Kittery, is the United States navy yard. There are no meteorological observations to be had in regard to Portsmouth, but a fairly accurate idea of the climate may be obtained by striking an average of the climatic data of Boston and Portland, which are on the coast fifty miles east and west of Portsmouth, and which differ but little from each other. Estimating in this manner we have the following figures: Mean average yearly temperature, 47.3° F. Mean average temperature for the four seasons: spring 44.1°, summer 68.1°, autumn 50.3°, winter 26.8°.

The annual mean relative humidity of Portland and that of Boston are almost identical, and that at Portsmouth is, therefore, probably the same, which is 69.6 per cent., varying but little during the year. The average number of clear and fair days is: spring 58.3, summer 65.6, autumn 61, winter 59.6; year, 244.7. The yearly rainfall is 43.6 inches. The prevailing wind is from the southwest and west. All along this coast there may be a few very hot days during the summer, but generally the air is cool and delightful, and the sea breeze is almost a daily occur-

rence. The accommodations are good, among them one very excellent first-class hotel. Although Portsmouth is a city, yet it is such a mild and quiet one that it offers many advantages for even a whole summer's sojourn. The society is exceptionally good, to which the adjacent navy yard makes valuable contributions; the air pure and cool; the scenery in the vicinity very attractive, and there are many excursions both by land and water. There are various churches, one the historic old St. John's, a good library, a well-equipped hospital, and excellent physicians. Frequently some of the vessels of the North Atlantic Squadron visit Portsmouth during the summer, and there are always one or more warships at the navy yard.

The water supply of Portsmouth is from springs and driven wells a few miles from the city, and is regarded as of excellent quality. Sewers emptying into tide water are being slowly introduced, although many of the old-time vaults still remain.

The average yearly mortality for the last eight years (1894-1901) is 19.25 per thousand.

An old resident and practitioner of Portsmouth assures the writer that the sanitary condition is good, and that there are very few cases of sickness which can be attributed to unsanitary conditions.

One is referred to the writings of T. B. Aldrich, Lowell, and Mrs. Celia Thaxter for charming accounts of Portsmouth and the Isles of Shoals.

**Newcastle.**—This small island at the mouth of the Piscataqua River, about two miles from Portsmouth, is a popular summer resort, with a large hotel, boarding-houses, and cottages. The situation of Newcastle is very picturesque, and it has a beautiful and extensive ocean exposure. It is connected with the mainland by bridges, and has frequent communication with Portsmouth by land and water. There are opportunities for golf, tennis, boating, and bathing. There is a military garrison at Fort Constitution. The climate is the same as at Portsmouth, with the exception that being directly on the ocean, it is more peculiarly marine.

**Kittery Point,** at the mouth of the Piscataqua River, opposite Newcastle, is very attractively situated and is a popular summer resort, affording good accommodations, both in hotels and cottages. It has frequent communication with Portsmouth both by trolley and by boat.

**Isles of Shoals.**—This group of small, rocky islands lies about nine miles off the coast, and has communication in the summer with Portsmouth several times a day by a comfortable steamer, the voyage occupying about an hour. Appledore is the largest of the group, which consists of eight islands, and contains two hundred and fifty acres. The formation of these islands is granitic, and they present a rugged picturesque appearance, barren, and with very sparse vegetation. Huge, irregular reefs jut out into the ocean, and after a storm the play of the

surf is very imposing. Only two of the islands provide accommodations for summer residents, Appledore and Star Island, there being extensive hotels on both islands. The accommodations are rather more elaborate and expensive on the former (Appledore), and there are several cottage annexes. These islands have been a popular summer resort for many years, owing to the cool, equable marine climate found there, with an absence of dust and flies. Here one can experience all the climatic influences of a sea voyage without the discomforts incident to ship life. They are far enough removed from the mainland to be free from all contaminating influences, and from whatever quarter the wind blows it brings pure air. From a "weather record" for the summers of 1897-98 (June 25th to September 15th) kindly furnished the writer by Dr. J. W. Warren, who has been a summer resident of Appledore for over twenty years, the following data are condensed:

Mean temperature (Fahrenheit scale) from two daily observations at nine and four o'clock. June (25th to 30th) 63.2°, July 65.7°, August 67°, September (1st to 15th) 64.8°. The maximum temperature for this period was: June (25th to 30th) 70°, July 81°, August 78°, September

can be reached from the latter place by steam railroad, or by ferry, and a most attractive trolley ride. York Harbor is the principal resort, and enjoys a wide popularity. Cottage life predominates, although there are several good hotels. The coast is bold and rocky, and the York River winds inland for some nine miles, and has a large flow of tide water. The residential portion of the town is built upon ledges with little or no subsoil, so that there is good surface drainage, aided by the natural declivity of the land toward the sea. Further inland are wooded districts and tillage lands. The climate is a particularly stimulating one, favorable for convalescents, for whom a marine climate of this nature, combined with sea bathing, is desired. The air is generally cool and the temperature equable, an extremely hot or cold day in the summer being rare. Fogs are unusual. The following climatic chart was obtained through the kindness of Dr. Seabury W. Allen, a summer resident of York Harbor, as also much of the information contained in this account. The prevailing wind is southwest to southeast during the summer months, and is only exceptionally of sufficient velocity to interfere with canoeing or sailing.

CLIMATE OF YORK HARBOR—PREPARED BY DR. SEABURY W. ALLEN.

	June.	July.	August.	September.	October.
Temperature, Degrees Fahr.—					
Average or normal.....	62.3°	69.9°	65.8°	58.4°	} For three years, 1897-1899.
Highest or maximum.....	82.3	87.3	87.3	79.3	
Lowest or minimum.....	45.0	51.6	48.3	39.6	
Precipitation—					
Mean annual precipitation for twenty-five years, 40 to 50 in.					
Mean monthly average rainfall (April to September) twenty-five years, 3.4 in.					
Average number of days in which rain fell (for three years).	11	9	7	9	
Average daily temperature (for nine years).....	8 A.M.—67 8 P.M.—68	8 A.M.—67 8 P.M.—67	8 A.M.—65 8 P.M.—70	8 A.M.—56 8 P.M.—57	8 A.M.—45 8 P.M.—46

(1st to 15th) 80°. Minimum, June (25th to 30th) 56°, July 56°, August 53°, September (1st to 15th) 56°. The summer temperature is said to be several degrees cooler than it is on the coast. Cold, raw days are infrequent, and the difference in temperature between day and night is slight, so that one can generally sit out in the evening. In general, the variations in the temperature are never as pronounced as on the mainland.

The average number of fair days for the two years was: June (25th to 30th) 4, July 15, August 17, September (1st to 15th) 9. Number of partly cloudy, misty, or foggy days: June (25th to 30th) 2, July 13, August 10, September (1st to 15th) 2. Partly rainy or rainy days: June (25th to 30th) 1, July 1.5, August 1.5, September (1st to 15th) 1.5.

The prevailing summer winds are southwest and south-southwest, and are not generally high. Fogs are not so prevalent as farther east, although they occasionally occur. The average number of rainy days is said to be much less than at Portland or Boston.

Therapeutically this climate has been found to be of great benefit to convalescents and to certain cases of neurasthenia. It is peculiarly valuable for those who, for one reason or another, wish to be much in the open air and at rest, for there are few inducements or opportunities to take exercise. Many years ago the late Dr. H. I. Bowditch considered the summer climate of these islands favorable for early cases of pulmonary tuberculosis, and they surely possess the requisite of pure air. Many cases of hay fever find immunity here. On White Island is a lighthouse, a prominent object from the mainland. There is good sea fishing and sailing about the islands. A steam launch affords frequent communication between Appledore and Star Island.

For much of the above information the writer is indebted to Dr. J. W. Warren.

**York Harbor and Beach.**—These resorts, on the Maine coast, are about nine miles distant from Portsmouth, and

Thunder storms are frequent in summer, but a continuously rainy day is the exception. The water supply is excellent; it is obtained from an inland lake some five miles distant. The ice, milk, and farm produce are also of good quality. The larger houses and hotels have sewers running into the sea, the smaller ones either connect with one of these sewers or have cesspools of their own.

So far as known there have been no cases of illness attributable to imperfect drainage. Indeed, this resort enjoys almost complete immunity from zymotic and infectious diseases. Gastro-intestinal disorders, especially in children, are rare. Such a climate, or indeed any cool marine one, is obviously not suitable for patients suffering from rheumatism, bronchial and pulmonary affections.

**York Beach,** situated a few miles to the eastward of York Harbor, possesses essentially the same characteristics as the latter, with the exception of the drainage. Here, on account of an extended swamp, lying behind the beach shingle, and which is imperfectly drained, there is always more or less stagnant surface water, and for this reason this locality is not so desirable as a place of summer residence.

Several miles beyond York Beach and to the northward is the Passaconaway Inn, on a rocky promontory, affording good accommodations, and still farther along the coast is the extensive Ogunquit Beach, reaching toward Wells.

**Rye Beach.**—This well-known and favorite summer resort is eight miles distant from Portsmouth by electric road, and is also easily reached from Boston by rail to North Hampton and thence by trolley. The air is warmer than on the Maine coast, but is fresh and cool, with an almost daily sea breeze. Moreover, the humidity (about seventy per cent.) is considerably less than at many other marine resorts. The majority of summer days are clear or fair, and the rainfall at that season is moderate. The general healthfulness of this resort is noteworthy, and children especially thrive here. The rapidity with which delicate and sickly children improve in this climate is often quite remarkable. It is also fa-