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REPORT

ON THE

DISEASES OF MISSOURI AND IOWA.

BY

THOMAS REYBURN, M. D.,
OF ST. LOUIS.

EXTRACTED FROM THE
TRANSACTIONS OF THE AMERICAN MEDICAL ASSOCIATION.

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REPORT ON THE DISEASES OF MISSOURI AND IOWA.

To the President of the
American Medical Association:—

The Chairman of the Committee appointed in 1851 to report on the prevalent diseases (epidemics) of Missouri, Illinois, Iowa, and Wisconsin, herewith presents to the Medical Association a partial report, embracing the diseases of Missouri and Iowa from 1851 to 1854 inclusive. In accordance with the regulations of the Association, the Chairman of the Committee, soon after his appointment, selected Dr. John Evans, of Chicago, Illinois, Dr. John F. Sandford, of Keokuk, and Dr. John H. Rauch, of Burlington, Iowa, to co-operate in preparing the report, apportioning the discussion of the diseases of Illinois and Wisconsin to Dr. Evans, those of Iowa to Dr. Sandford and Dr. Rauch, reserving those of Missouri for the labor of the Chairman of the Committee. The papers now presented were prepared by the parties whose names are appended to them. The Committee respectfully asks for further time to complete the report on the diseases of the district committed to its supervision, and would likewise suggest the propriety of dividing the district into smaller sections, so as to facilitate the progress of the task enjoined upon us.

Respectfully submitted,
THOMAS REYBURN, M. D.,
Chairman of the Committee on the Epidemics of Missouri, Iowa, &c.

St. Louis, *April* 25, 1855.

TOPOGRAPHY OF ST. LOUIS.

St. Louis is situated on the western bank of the Mississippi, 1,390 miles above the Balize, 1,286 above New Orleans, 174 above the

confluence of the Ohio, and 19 miles below the mouth of the Missouri. It is in lat. 38° 37′ 28″ N.; long. 90° 15′ 39″ W. According to Nicollet, the elevation of the river, at low water opposite St. Louis, is 382 feet above the gulf. (See Appendix for exact altitude.)

"The city is built in a gentle bend of the Mississippi, which flows nearly from north to south. Its site is a bed of carboniferous limestone, covered with deposits of loam, which, though generally deep, are, in many places, so thin that the foundations of the houses rest on the solid rock. Above the city the rocks appear in low bluffs." (Drake.) The river front, along the town, is nearly a level, the north and south extremities being but little depressed below the central portion. From this front, the central portion of the town rises in a gentle and nearly regular manner to the elevation of about 80 feet above low water, making it 462 feet above the level of the sea. (Nicollet, as quoted by Drake.) "In advancing into the country in any western direction from south round to north, we either continue on this, or gradually rise to a higher level. The rocks beneath are calcareous, with beds of coal. The general aspect of the surface is that of levelness, and some small portions incline to be swampy; but in general the drainage is perfect, by means of the inequalities, the fissures and the apertures of the subjacent rocks. The soil is rich and argillaceous rather than sandy, and, where not cultivated, is covered with a thin growth of oak and hickory trees, and copses of hazel bushes. The rapid growth of the city has led, in latter years, to a great deal of levelling, and, consequently, to the exposure of much new surface to the action of the elements." (Drake.)

The surface level of the city may be described as presenting three different elevations, which we shall describe as the southern, central, and northern sections. These sections are of different area, the central being the most extensive, and as it rises and runs back from the river, it projects to the north an elevated extension, which hems in the north section on its western side. This central section, the highest level of the city, is more irregular in its surface than the other sections, presenting within its boundaries some of the most elevated points within the city limits, and, as it recedes from the river, a gradually descending grade at one point that dips nearly to the level of the lowest or south section. On its southern limits is a valley that was once the bed of an extensive pond, called Chouteau's Lake, a lateral expansion of the Gravois, or Mill Creek, that drained

an extensive area of the county of St. Louis. This valley, and its outlet, Mill Creek, are fast disappearing, the lake itself having been, within a few years, drained, and its bed elevated by the extension of streets across it. The river front of this central section is, in extent, about two and a half miles. It is slightly undulating, and, for the most part, is above the level of the annual freshets of the river, yet, in some few places, admitting their encroachments over a very limited extent of surface, to the depth of one or two feet.

The southern section is a low level, once an extensive meadow or hollow, which, in extraordinary freshets in the Mississippi, is in some parts liable to overflow. Towards its northern limit, is the valley of Chouteau's Lake and Mill Creek described above. The natural surface of the river bank here, is a few feet above the usual high water in the river; the grade of the section ascends as it recedes from the river. The streets intersecting it are all elevated above the natural level, and, in some instances, as they approach the bed of the former pond, their elevation is over twenty feet. This section has a river front of nearly two miles; it extends back about three-eighths of a mile from the river, when the grade ascends, soon attaining an elevation equal to the highest point in the middle section. The northern section is, like the southern, an extensive area of level bottom land, which extends about a mile and a quarter along the Mississippi with a depth, back from the river, of little over a quarter of a mile. Like the southern section, it is hemmed in on its western limits by elevated ground that here is a projection of the central section, forming a ridge or high land, along the brow of which hang the vapors or miasmata which are generated in the bottom land. The artificial grading of this section is elevated some six to twelve feet above the natural surface, and extensive filling in with earth has been required in building this as well as the southern quarter of the town. The general surface of this section is from forty to about sixty feet below the plateau of the central section, and a few feet more elevated than that of the southern section.

Opposite the central portion of the city, is what was formerly known as "Bloody Island," a detached portion of land lying near the Illinois shore, of the same level as the great American Bottom. This island has been connected with the American Bottom by causeways across the slough between it and the Bottom for the purpose of throwing the channel of the river towards the St. Louis shore.

In front of the southern section is an artificial extension of the main land, connecting what was once Duncan's Island with the

Missouri shore, the slough which formerly ran between these being now filled up. The eastern river front of this section suffers by the annual abrasion of the river. On the Illinois shore, opposite the city, is the Great American Bottom, the topography of which, and its influence on the health of St. Louis and its vicinity, are well described in Drake's work, to which we may refer our readers for further information.

The water used by the inhabitants of St. Louis, is chiefly that distributed from the Mississippi by the hydrant system. In the districts remote from the river, and in those beyond the corporate limits, well water is used. The well water is impregnated with lime, and, in some localities, is rendered impure by the percolation of the surface drainage. Both the river and well water induce diarrhœa in those who but recently adopt it as a beverage, and from our observation, it has a material influence upon the liability to enteritic affections which is so observable in the entire population of the locality.

It may be readily inferred from what we have stated, that the several sections as described, vary in their relative liability to disease, and to some extent, this liability is irrespective of the social character or circumstances of the local population. As a general rule, the lowest levels constituting the north and south sections are more unhealthy than the central district, but to this we find an exception in the oldest settled part of the south section, which was the original site of the village of St. Louis. This part enjoys, comparatively, a greater immunity from disease than other parts of the same district which have been more recently settled and improved. The south and north sections have been the principal districts of the cholera visitations; but the central section, even in some of its most elevated portions, has not been entirely exempt. The lower lands in this district are as liable to disease, as are the same elevations, or rather depressions in the adjoining sections. The district on its southern or southwestern limits, adjacent to the Gravois valley, and a district in its northwest limit near Biddle, Eighth and Tenth Streets, that has been but a few years reclaimed from inundation of the vernal rains, have been among the principal locations of cholera in its annual visitations, and are subject to paludal fevers and dysentery. The north section is, perhaps, most liable to intermittent and remittent fevers. The south section, though subject to them, is perhaps less so than the northern. The ridge or extension of the middle section that hems in the north section, is

more exposed to these fevers than the adjacent bottom land. The suburban districts beyond the city limits are liable to autumnal and vernal periodic fevers.

The area of the corporate limits of St. Louis is 4.65 square miles, being a front of about five miles along the river, with a depth therefrom of not quite one mile. This area does not include the entire territory and population belonging to the city proper, that must be included in estimates of the diseases and mortality of the locality. Beyond the corporate limits on every side save the east, is an urban district that is in many portions as densely populated as the central part within the limits. Sectional differences as to the terms on which this extra urban district shall be admitted to the privilege and benefits of the older city, have for several years prevented its incorporation into the city. It constitutes as decidedly and properly a portion of St. Louis proper, as the second municipality does a part of New Orleans, or the borough of Southwark a part of Philadelphia. On the north, and immediately adjoining the city limits, it contains the incorporated municipalities of Bremen and Lowell; the former, the limits of which are more contracted than any of the wards within the city in 1850, contained a population of over 5,000, and the portions of the district on the west and south of the city boundary lines are equally as populous as Bremen. The mortuary district represented in the bill of mortality published every week by the Registrar of St. Louis, includes the corporate limits above referred to, and also the extra-urban district for fully a mile and a half north and south, and about two or two and a half miles west of the corporate lines of the city. The cemeteries, the sextons of which furnish the certificates of interments from which the Registrar's weekly tables are made out, all lie beyond the corporate limits at the distance of from one to three miles from the city, and receive the dead of even a more extensive portion of the township beyond the limits than we include in the extra-urban district above referred to.

Population.—The population of the mortuary district (as we may term the incorporated limits of the city with its adjoining district), is not wholly represented in the census returns that are made out biennially under the authority of the city; a very correct estimate of it, however, may be made from the data furnished by the United States census reports of 1850, those of the State census in 1852, and those of the municipal enumerations of population in 1850, 1852 and 1854. These enable us to present the following statistics

of population in the entire district for the four years, over which our report upon the diseases of the locality extends.

Tabular Statement of the distribution of Population in St. Louis and its Environs for four years, from 1851 *to* 1854 *inclusive.*

	Under 5 years.	5 to 10 years.	10 to 15 years.	15 to 20 years.	20 to 45 years.	45 to 60 years.	60 years and over.	Aggregate population.
1851 . .	13,376	10,605	9,016	9,377	50,611	6,252	1,550	100,787
1852 . .	15,238	11,776	9,409	9,760	50,447	5,884	1,521	110,035
1853 . .	17,004	12,829	9,609	9,479	61,764	5,302	1,449	117,446
1854 . .	19,207	19,157	9,944	9,487	68,454	4,683	1,383	127,315

The aggregate population for each year in the above table, is made out by the increase observed on comparing the United States, State, and city census returns, and the enumeration is sustained by the variations recorded in the statistics of immigration in each of the four years. The apportionment of ages in 1850 being taken from the United States census returns, we then take the apportionment in the city census report of 1854, for the population within the corporate limits, and distribute the ages of the extra-urban population according to the distribution of the first ward in the city; this being the ward that, in character of population, ratio of annual increase, &c., approximates nearest the extra-urban district. Having, then, 1850 and 1854 for extremes, we calculate the ratio of each age for each extreme year; and, observing their variations, distribute the ages in the intermediate years, according to the relative increase or decrease of each age observed in the five years. The numerical results in the table are, therefore, only approximative to the true census.

The following are the variations in the ratio of the different ages noticed as between 1850 and 1854.

Ratio.	Under 5 years.	5 to 10 years.	10 to 15 years.	15 to 20 years.	20 to 45 years.	45 to 60 years.	60 years and over.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
1850	12.66	10.32	9.32	9.92	49.014	7.046	1.69
1854	15.08	11.12	7.81	7.45	53.76	3.67	1.08
Variation in 5 years	I. 2.42	I. 0.80	D. 1.51	D. 2.47	I. 4.746	D. 3.376	D. 0.61

The increasing ratios are marked "I," the decreasing, "D." The figures applied to the two classes of ages in the two years, represent the ratio of each age to the entire population. The ratio of increase in the five years, it will be observed, has been greatest in the

population of from 20 to 45 years. The largest proportion of the immigrant population in every year has been of adults of this age.

RISE AND FALL OF THE MISSISSIPPI AT ST. LOUIS.

The rise and fall of the river at St. Louis, is graduated by the terms high and low water-marks. A limestone column, commemorative of the great rise in 1844, planted near the curb-stone intersection of the Levee, or Front Street, on the river bank and Market Street, is the point of observation. Low water-mark is 30.5 feet below the curb-stone at the base of the column or directrix. High water is 38.1 feet above low water-mark. The extraordinary high water in 1844, was 7.55 feet above the directrix, or ordinary high water. The great rise in 1851, was 4 feet 9½ inches below that of 1844.

The stage of the water at St. Louis is materially affected by contributions from the Upper Mississippi, the Missouri, and the Illinois rivers. The breaking up of the ice on the upper streams on the close of winter, is usually associated with a moderate rise in the three rivers. The Illinois and Mississippi rising early, and at the same time; the Missouri usually a little later. This rise generally occurs between the last of January and the first of March, sometimes it is earlier, very seldom later. A fair stage of water for navigation is usually maintained for the remainder of the season, the entire country, for the season, being subject to a greater or less distribution of rain. The months of April, May, and June, constitute the "rainy season;" and, in this last month, the great annual freshet in the river arrives. If the rains be extensively and simultaneously distributed in the districts on either side of these rivers at this season, the entire country is liable to the inundation of the bottom lands on their banks. (*Vide* Rain Table in the Appendix.)

The year 1851 is memorable as the date of one of the three great floods that have occurred in the Mississippi and Missouri since the settlement of St. Louis by Laclede, in 1764. The first was in 1785; the second in 1844; the last in 1851. Usually the annual freshet in the rivers commences with the end of May, reaching its maximum by the last week in June; it then subsides. This rise is chiefly contributed from the Missouri; and, except in the years named, has never exceeded the level of the river bank along the front of St. Louis. In these years, however, the lower levels

of the city were inundated, and also the bottom lands all along the Missouri, Illinois, and Mississippi, the farms and other improvements on the latter being destroyed, the stock drowned, and the inhabitants compelled to fly to the bluffs. In the appendix to our report, will be found a statement of the rise and fall of the Mississippi at St. Louis during the flood of 1851.

The annual June freshet is attributed by some observers to the rise created in the Missouri by the melting of the winter snows on the plains of the Upper Missouri, and in the Rocky Mountains. This cause, in some years, undoubtedly contributes in part to the vernal rise, but the wet season that usually sets in in the spring months, is the chief cause. The distribution of the spring rains in the country drained by the Missouri, Illinois, Mississippi, and their tributaries, varies in different years and in different localities in the same season. When these rains are general throughout the entire country on these rivers, a simultaneous rise occurs in all of them, and a flood may be anticipated.

The stage of water in the Mississippi and Missouri, after the subsidence of the June rise, varies, being generally low and difficult of navigation in August, September, and often, also, in October, when a slight rise occurs, which maintains until navigation is suspended by ice in December or January. Usually navigation is only suspended at St. Louis, and to the mouth of the Ohio, by ice for four or six weeks in the middle of winter.

REPORT ON THE YEAR 1851.

Diseases of St. Louis.

The first quarter of the year 1851 presents little of interest, so far as regards the present diseases. The affections ordinarily observed at the period of the year prevailed, but in no greater amount than usual. Affections of the respiratory organs were the most numerous causes of death. Consumption occasioned a mortality of 18 in January, 13 in February, and 18 in March; Pneumonia occasioned 12 deaths in January, 9 in February, 2 in March; Pleurisy, 1 in January, 2 in March; Croup, 5 in January, 5 in February, 2 in March. Affections of the nervous system, inflammation and congestion of the brain, apoplexy, convulsions, mania-à-potu, hydrocephalus, occasioned 77 deaths during the quarter. Typhus and typhoid fevers are the reported causes of 15 deaths in January, 31

in February, and 18 in March. The most commonly prevailing diseases of the digestive organs were diarrhœa and dysentery in small amounts, with a few scattering cases of cholera Asiatica, the latter, as usual in every year of its visitations, foreboding its advent by the dropping off of sentinel cases at its outposts. The total mortality for the quarter from all causes, was 509.

Meteorological Conditions of the Year.—In the appendix at the conclusion of our report will be found statements of the meteorological circumstances of the year. The weekly tables we have prepared from data furnished by George Engelman, M. D., of St. Louis. We have deemed it proper, also, to append to our reports his monthly meteorological tables and remarks thereon, although they have been already published in the *St. Louis Medical and Surgical Journal.* Some of our readers may not have access to that journal, and therefore not be enabled to institute satisfactory comparisons between the prevalence of disease in the year, as noticed in this report, and the meteorological circumstances of the entire year. For this reason we republish some matter which has already been in print. We take this opportunity of acknowledging our obligations to Dr. Engelman for many suggestions that have availed us in our report, and particularly for his aid in the preparation of tables and diagrams.

Cholera.—The advent of *Asiatic cholera* in this year, may be dated in the month of April, and, as in previous years, the disease first manifested itself among European immigrants who arrived in the city by way of New Orleans. Cases of the disease occurred among these immigrants on the steamboats on their way from that port. The first considerable arrival of this class was by the steamer Latona, on the 11th. The number on board we are unable to give, but it is certain that the first victims of the disease were contributed from the crowd, as the records of the City Hospital at the time show that eighteen passengers from that boat were admitted to the institution suffering under cholera and ship fever. These diseases prevailed among other immigrants from the boat, who located their residence in different parts of the city. The number of deaths by cholera reported to the city register in this month was nine, all of which occurred amongst recently arrived immigrants. In view of the large influx of immigrants, and fear of an epidemic visitation, the city authorities, on the 28th of this month, ordered a rigid enforcement of quarantine. This measure, in this and subsequent years, consisted in the temporary detention at quarantine grounds

of the city were inundated, and also the bottom lands all along the Missouri, Illinois, and Mississippi, the farms and other improvements on the latter being destroyed, the stock drowned, and the inhabitants compelled to fly to the bluffs. In the appendix to our report, will be found a statement of the rise and fall of the Mississippi at St. Louis during the flood of 1851.

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on Duncan's Island, in front, and within a stone's throw of the southern section of the city, of all deck passengers on steamboats, the prescriptive right of the portability of cholera being by municipal wisdom limited to passengers who enjoyed the dignity of eating at the cabin table and sleeping in the berths, or on the oft-crowded cabin floor. Some idea of the immigration pouring into St. Louis may be gathered from the imperfect statistics furnished in the newspapers. On examining files of the daily *St. Louis Republican* for that period, we find that in April, May, and June, 1851, there were registered on 28 of the New Orleans boats at St. Louis, 4,227 immigrant passengers, of which number 3,210 were lately from Europe, and 1,665 from California. In addition to the arrivals by this channel of supply, a number of immigrants equally as great was passed in by the northern lakes, Illinois and Ohio River routes. The principal victims of cholera were those who came by way of New Orleans, where the disease prevailed at this time.

The disease thus established in the city, continued at a moderate and even grade of prevalence, until the middle of May, when a marked increase was noted. From this time, its progress was rapid, the number of cases and deaths multiplying each succeeding week. We have no means of ascertaining the number attacked, as no statistics of cases were exacted from physicians by the public authorities, but we believe an approximate estimate may be very correctly made by taking the weekly mortuary reports, and calculating the ratio of cases at 100 to every 35 or 37 deaths. This ratio must be varied when applied to daily estimates, but from inquiry instituted at the time, we believe it a fair basis of calculation for the relative weekly prevalence of the disease. In the month of June, the disease attained its maximum prevalence, the weekly mortality increasing from 64 in the first week of the month, to 127 in the second, and 153 in the third, when the climax of the visitation was reached. The succeeding week, ending June 29th, afforded a mortality by the disease of 147, suggesting that for the last two weeks of the month, the epidemic was at or near an even, although high range of prevalence.

Comparing its visitation in this year with that of 1849 and 1850, cholera in 1851 commenced somewhat later in the season, attained its climax a little earlier, and declined much more rapidly than in those years. Its decline was signally rapid in this year. The last week of June, as we state above, presented a mortuary record by

cholera of 147, the succeeding week, the first one in July, gave 81 deaths. Until the middle of the month, the rate of prevalence was, though reduced, uniform; the deaths in the second week numbering 79. In the third week, the mortality fell to 48; in the fourth week, it was 28. Few cases occurred in the month of August among the resident population, the weekly mortality by the disease ranging in its four successive weeks, at 14, 10, 12 and 7. Nine deaths by it were reported in the month of September, and two occurring in November made the final sum of its mortality in the year.

Statistics of the Public Hospitals.

There were received into the St. Louis Charity Hospital in this year, 169 cases of cholera, of which 80 recovered, 89 died; a mortality of 52.6 per cent. The cases generally were malignant, the subjects being mostly emigrants who had aggravated their disease by imprudence and neglect in its early stage; many of them entered the hospital in the stage of collapse.

Into the City Hospital, there were received in April 9, in May 7, in June 80, in July 23, and in August 8 cases; a total of 128 cases. Of these, 8 were moribund when brought in, and 22 died within 16 hours of their admission.

Of the 98 surviving 17 hours after admission, 6 died within 24 hours, 43 died subsequently.

Of the 92 surviving 24 hours after admission, 9 died within 3 days, 34 died subsequently.

Of the 83 surviving 2 days after admission, 13 died within 4 days, 21 died subsequently.

Of the 70 surviving 4 days after admission, 4 died within 5 days, 17 died subsequently, 2 had recovered.

Of the 64 surviving 5 days after admission, 4 died within 6 days, 13 died subsequently, 3 had recovered.

Of the 57 surviving 6 days after admission, 1 died within 7 days, 12 died subsequently, 7 had recovered.

Of the 49 surviving 7 days after admission, 11 died within 13 days, 1 died subsequently, 21 had recovered.

Of the 17 surviving 14 days after admission, 1 died within 18 days, 0 died subsequently, 16 had recovered.

Total recoveries 49.

The mortality above is 61.7 per cent. on the entire number, or

56.3 per cent. of such as are not reported moribund when brought in, or 50 per cent. of all surviving 16 hours after admission. The cases were of the same character as those received in the Charity Hospital.

In the above institutions, total admissions were 297; recoveries, 129; deaths, 168; ratio of mortality of total, 56.5 The total, 168, dying in the two hospitals, taken from the total mortality in the city (847), leaves 679 as the mortality in the houses in the city.

Mortality.—The mortality from cholera in St. Louis, in 1851, is, by our enumeration of the official records in the City Register's office, 847, out of an aggregate of deaths from all causes of 4,382. It may be of some interest to compare the mortality of the year with that of the two previous years; the first of the two, 1849, being the great cholera year, and the first of its visitation since 1834. We therefore present the following:—

The aggregate mortality in 1849, was 8,603; by cholera alone, 4,577. The disease was most prevalent in the month of July, the aggregate mortality of the month being 2,668; by cholera alone, 1,895. The aggregate of June, 1849, was 2,440; by cholera alone, 1,799; of May, aggregate, 786; by cholera alone, 517. The maximum weekly aggregate was for the week ending July 2; the aggregate being 951; by cholera alone, 739. On twelve days in the year was the mortality by cholera 100 or over, namely: June 24, 118; June 27, 115; June 28, 123; June 29, 119; July 1, 100; July 2, 105; July 3, 103; July 4, 108; July 9, 101; July 10, 145; July 11, 124; July 12, 105; a total for these twelve days of 1,366. The aggregate of the four weeks that include these twelve days, namely: from June 19 to July 16, amounts to 3,488; the mortality by cholera alone being 2,718. (See McPheeters' Report in *St. Louis Medical and Surgical Journal*, March, 1850. *Vide* Cholera Tables in our Appendix.)

The aggregate mortality of the year 1850 was 4,638; the mortality by cholera, 982. The maximum mortality occurred in July, the monthly aggregate being 1,261; the mortality by cholera, 523.

We are enabled to present an analysis of the age and sex of only 781 of the cholera subjects dying in this year. This is owing to a defect in the records preserved in the Register's office. The returns from two of the city cemeteries for the week ending June 29 (St. Vincent's and City), are left out of the record. We obtained the sum of the interments in the two cemeteries from the health officer's report, of date July 1, 1851, and have added it to our enumeration

of the sum total of the year, but were unable to obtain the details of the missing returns. This will account for the disparity between our enumerations of the mortality in this year and those published in the *St. Louis Medical and Surgical Journal*, in July, 1852.

Mortuary Table, showing the Age and Sex of Subjects dying of Cholera in St. Louis in the months of April, May, June, July, and August, 1851.

	April.		May.		June.		July.		August.		Total.		Aggregate.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
2 years and under . .	...	...	1	1	23	16	9	8	1	2	34	27	61
2 " to 5 years .	...	...	...	1	16	10	6	13	3	...	25	24	49
5 " to 10 " . .	...	1	1	3	13	10	7	6	3	2	24	22	46
10 " to 15 " . .	...	...	1	2	14	9	6	1	...	1	21	13	34
15 " to 20 " . .	...	1	...	1	15	14	7	7	...	1	22	24	46
20 " to 30 " . .	2	...	10	6	70	37	38	22	6	4	126	69	195
30 " to 40 " . .	4	...	9	4	69	25	32	16	7	1	121	46	167
40 " to 50 " . .	1	...	7	1	30	17	20	10	5	2	63	30	93
50 " to 60 " . .	...	...	1	...	19	7	7	8	2	1	29	16	45
60 " and over . .	...	...	...	...	8	9	5	7	1	...	14	16	30
	7	2	30	19	277	154	137	98	28	14	479	287	766

Of the remaining 15 that must be added to make up the total of 781, 2 died in January, 1 in February, 1 in March, 9 in September, and 2 in November; 1 was under two years of age; 1 was between 2 and 5 years; 1 was between 5 and 10 years; 2 were between 10 and 15 years; 1 was between 15 and 20 years; 3 were between 20 and 30 years; 1 was between 30 and 40 years; 2 were between 40 and 50 years; 2 were between 50 and 60 years; and 1 was over 60 years of age. Entire total, males, 488; females, 293.

The ratio of deaths by cholera in this year, to population at the different periods of life, is as follows:—

	Per cent.
Ratio of deaths in subjects 5 years and under, to population of same age	0.83
" " " 5 to 10 years of age, " "	0.44
" " " 10 to 15 " " "	0.39
" " " 15 to 20 " " "	0.50
" " " 20 to 45 " " "	0.81
" " " 45 to 60 " " "	1.50
" " " 60 and over " "	2.00

The calculation above for subjects of 20 to 45 years, assumes that the mortality of those between 40 and 50 years is equally distributed between 40 and 45 years, and 45 and 50 years of age. Calculating the ratio of all from 20 to 60 years, we have: Ratio of deaths in subjects from 20 to 60 years, to population of same age, 0.89 per

cent. Taking the aggregate of all ages dying of cholera in this year, we have:—

	Per cent.
Ratio of entire number of deaths by cholera to entire population . .	0.84
" " " " " " mortality . .	19.32

It will be observed that, in this year, the mortality was greatest in subjects over 60 years of age, and in those from 45 years to 60. Under 5 years, and from 20 to 45 years, the liability to death was in about the same degree. The resistance to death was greatest in subjects from 10 to 15 years of age.

COMPARATIVE MORTALITY OF 1849, 1850, 1851.

1849.	Aggregate of deaths from all causes				8,603,	from cholera		4,557
1850.	"	"	"	"	4,638,	"	"	982
1851.	"	"	"	"	4,382,	"	"	847

Prevalent Intestinal Diseases.

Leaving the subject of cholera, we next take up the cognate affections of the intestines, that prevailed at the same time with that disease. These affections were notably influenced by the cholera cause, being increased in their relative prevalence in every year that cholera has prevailed in St. Louis, and further, being so interfused with that disease as to render an analysis of their relative causation a matter of extreme difficulty. The diseases that we thus classify in relation to cholera Asiatica, are, diarrhœa, dysentery, bilious diarrhœa, and cholera infantum. These are endemial in one section of the west, and, we may add, in every section in the Ohio, Cumberland, Tennessee, Wabash, Illinois, Missouri, and Mississippi Valleys, that have their soil superimposed on a limestone formation. Their endemic causes have been aided in operation whenever and wherever epidemic cholera has existed, the relation thus established being not only as to mortality, but also as to non-mortuary prevalence; or, in other words, these diseases have not only been rendered more fatal by the presence of epidemic cholera, but they have been increased in their amount and in the severity of their symptoms.

DIARRHŒA.—This disease was observed to precede the outbreak of cholera in this year, but it did not then prevail to as great an extent as in the two preceding years. Its connection with the cause of cholera is apparent from its first invasion being in April and May, a period of the year when it does not ordinarily occur. This

connection was further manifested by the unusual amount of the disease that prevailed in June and July, when in every year it is a disease of our climate and locality, but not to so great an extent as it was in this and other cholera years. It persisted, however, after cholera disappeared, attaining its maximum mortality several weeks later than cholera, and continued during the autumn, and, to some extent, during the winter months, at which seasons it found its subjects principally amongst the immigrants arriving on the steamboats, or at quarantine, or in the wards of the two public hospitals, and amongst the poorer population who were liable to the ordinary causes of typhus or typhoid fevers. It prevailed, at a moderate rate, in March and April, increased in May and in June; a still greater increase was noticeable in July, and its maximum degree of prevalence was in August. It persisted during the hot weeks of September, and then abated, following a moderate descent in point of numbers attacked during the autumn, and now presenting, from first to last, the protracted current of symptoms and lesions recognized in the term chronic diarrhœa. It was a modification of cholera, while that disease lasted, being its primary stage, which, if not controlled, ran into the more clearly recognized form of malignant cholera. As cholera diminished, it then owed its existence to the same causes that produced its cousin-german dysentery, namely, endemial or climatic causes. As the hot months passed away, its relationship was to typhoid fever, being generated by *ochlesis* (crowd-poison), and selecting its victims from the poorer hovels, and in the crowded wards of the hospitals. Its mode of fatal termination, where cholera prevailed, was in that disease; when dysentery existed, it was often the produce of this latter, terminating in acute ileo-colitis, colitis, or colo-rectitis. Later in the year, its relationship was, as we have remarked, with typhoid fever, its course being now protracted and terminating with ulceration of the intestinal follicles, accompanied by "head symptoms." Its pathology varied with the diseases with which it was associated, being that of cholera during the existence of that disease, that of dysentery in midsummer, and analogous to that of typhoid fever later in the year. Like a hired footman, it changed its livery with the master it served, being in succession blue, crimson, and pale-yellow. In connection with cholera it was a serous diarrhœa, the natural dejections, at first being slightly liquefied, were succeeded by the very fluid or rice-water dejections of cholera. Associated with dysentery it was often a febrile diarrhœa, the dejections at first liquefied by the

mingling of mucus, then, perhaps, changed into those of true dysentery, or it became a hybrid known as "choleraic dysentery," a term applied to cases wherein a sero-sanguinolent intestinal profluvium occurred, a combination of the lesions of three diseases, cholera, diarrhœa, and dysentery; the diarrhœal symptoms being profuse serous dejections; the dysenteric, the mingling of blood and mucus with slight tormina and tenesmus; the choleraic, the tendency to collapse that was so often noticed. This form of the disease was ataxic, typhoid exhaustion generally occurring in its final stage.

Diarrhœa, in this year, found its subjects amongst all ages; its victims were chiefly taken from the extremes of life. Its causation was complex, being a blending of epidemic, meteorologic, and geologic influences. The cause of cholera exerted an influence on it, extreme solar heat, sudden vicissitudes of temperature and humidity likewise influenced it, and no doubt its prevalence, being chiefly in limestone districts, is something more than mere coincidence.

Mortality.—This is exhibited in the following table:—

Tabular Statement, presenting the Mortality by Diarrhœa in St. Louis in 1851, *&c.*

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 1 year	..	..	..	..	..	1	..	..	1	..	8	2	5	5	8	3	1	..	3	..	2	1	1	..	29	12	41
1 to 2 y'rs	..	..	..	..	..	..	..	..	2	1	4	6	3	2	4	3	1	2	..	2	1	..	1	1	16	18	34
2 " 3 "	..	..	..	..	..	..	..	..	..	1	2	1	1	2	..	1	1	2	1	1	..	..	..	1	5	9	14
3 " 5 "	..	1	..	..	..	..	..	..	..	..	3	1	..	1	..	..	..	..	1	..	1	..	1	..	7	2	9
5 " 10 "	..	..	..	1	..	..	1	..	1	1	..	1	2	1	2	1	..	..	1	..	..	..	1	1	8	6	14
10 " 20 "	..	1	1	..	1	..	..	..	..	..	..	2	..	..	2	..	..	..	2	..	..	1	..	..	6	4	10
20 " 30 "	1	..	..	1	3	..	3	1	3	3	3	2	8	1	8	2	8	1	8	..	6	1	3	..	54	12	10
30 " 40 "	1	..	..	..	..	..	2	3	3	1	1	1	..	4	9	..	5	1	2	4	2	1	..	..	25	12	66
40 " 50 "	..	..	..	1	..	..	..	..	..	..	2	1	4	2	3	..	1	1	2	..	2	1	2	..	16	6	22
50 and over	..	..	..	..	..	..	..	1	..	..	..	..	1	3	2	2	1	1	..	1	2	..	..	..	6	8	14
Unk'wn age	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	1	..	..	..	..	..	2	1	3
	2	2	1	3	4	1	6	5	10	7	23	17	25	21	38	12	18	9	21	8	16	5	9	3	174	90	264

RATIO OF ABOVE TO POPULATION OF SAME AGES.

	Per cent.
Ratio of subjects under 5 years to population of same age . .	0.73
" from 5 to 10 years " " . .	0.13
" " 10 to 20 " " " . .	0.05
" " 20 to 45 " " " . .	0.22
" " 45 and over " " . .	0.32

The calculation of the ratio of 20 to 45 years, and of 45 years and over, assumes the mortality of 40 to 50 years to have been equal at from 40 to 45, and 45 to 50 years; otherwise we have:—

	Per cent.
Ratio of subjects over 20 years to population of same age . .	0.24

The mortality from diarrhœa in the year was first notably increased about the end of March. From that time up to the first weeks in June, the weekly number of deaths was nearly uniform. An increase took place at the end of June and first of July. The second week in this latter month presents a mortuary return of the disease of 15, a duplication of the number in the week preceding. The five weeks succeeding afford a mortality of 8, 9, 7, respectively. The next week, ending with August 17, gives a mortality of 14. The next succeeding, a mortality of 16, the maximum weekly mortality by this disease during the year. The mortality then diminished, the weekly rate for some time being near that in the month of June, and so continuing until December, in which month the mortality reports are still in excess of those by this disease in the months of the first quarter of the year. The total mortality from diarrhœa in this year is 264, against 274 in 1850, a positive decrease in this year.

	Per cent.
Ratio of deaths by diarrhœa in 1851 to aggregate mortality . .	6.00
" " " population . .	0.26

Dysentery.—This affection, one of the summer and autumn endemics through our section of the West, prevailed this year chiefly during the months of May, June, July, August, September, and October. It began in the warmer weeks of May, varied to some extent in its range with the meteorological changes of the season during the warm months, and was influenced by the general epidemic cause then existing. A marked increase of it occurred in the middle of June, nearly a uniform degree of prevalence then persisted, until the termination of the first half of July; the third week in that month shows the climax of the disease, when it continued to prevail with but little variation until September, when a diminution of it was observed. In the autumn it prevailed in a diminished degree compared with the summer months, but in an increased amount compared with the vernal season. In December, its mortuary result equalled that in May.

All ages were implicated in the attacks of dysentery. In children under five years of age, it was frequent, intractable, and dangerous, being very liable to the supervention of meningitis. The forms assumed by the disease will be noticed in speaking of its prevalence in 1854.

Tabular Statement of the Mortality by Dysentery in St. Louis in 1851, *&c.*

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 2 yrs.	..	..	1	1	1	..	..	..	4	..	5	6	7	8	10	6	7	3	5	3	2	1	..	..	42	28	70
2 to 5 "	..	..	..	..	..	..	..	..	..	..	1	1	1	2	5	2	1	2	2	2	3	2	..	..	13	11	24
5 " 10 "	..	..	..	..	..	..	..	..	..	..	3	1	2	..	3	2	..	..	1	1	1	..	..	1	10	5	15
10 " 20 "	..	..	..	..	1	..	..	1	..	1	3	..	2	1	4	3	2	1	..	1	..	..	..	..	12	8	20
20 " 30 "	..	..	2	1	2	1	2	..	2	..	6	1	4	2	5	7	6	1	3	2	2	..	3	..	37	15	52
30 " 40 "	1	..	..	..	..	..	..	..	1	1	1	2	5	1	3	1	1	..	7	1	4	2	2	1	25	9	34
40 " 50 "	2	..	..	..	..	..	..	..	..	..	..	..	2	5	5	1	2	..	2	..	..	..	1	..	14	6	20
50 " 60 "	..	..	..	..	..	..	..	..	..	..	..	..	2	1	1	2	1	1	3	2	..	1	1	2	8	9	17
60 and over	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	3	..	4	4
Unk'wn age	..	..	1	..	1	..	..	..	1	1	..	..	1	1	2	..	1	..	2	1	..	..	..	..	9	3	12
	3	1	4	2	5	1	2	1	8	3	19	12	26	22	38	24	21	8	25	13	12	6	7	4	170	97	267

	Per cent.
Ratio of mortality under 5 years to population same age . . .	0.55
" from 5 to 10 years " " . . .	0.14
" " 10 to 20 " " " . . .	0.1
" " 20 to 45 " " " . . .	0.18
" " 45 to 60 " " " . . .	0.43
" " 60 and over " " . . .	0.25
Ratio of mortality by dysentery to aggregate mortality of the year .	5.08
" " " population " .	0.26

BILIOUS DIARRHŒA.—Amongst the diseases cognate with those of which we have been speaking, stands prominently bilious diarrhœa, one of the earliest and most prevalent of our summer disorders, in this, and in every year of our residence in the West. Usually, it makes its appearance with the warm weather towards the end of May, becomes very generally disseminated in June, is perhaps a little less common in July, and disappears in August. We have no means of ascertaining the number subject to it in this, or other years; but, we may confidently state that, as a sub-epidemic in years during which cholera prevails, it is rather less frequent than other forms of diarrhœa, and more prevalent than dysentery. Its principal subjects in every year are adult males, whose occupation exposes them to solar heat; adult females are also liable to it, though in but small ratio. In children under 5 years of age, it is more frequent than in adult females, and is often the prodromus of dysentery and cholera infantum. Uncomplicated with colitis or ileitis, it is seldom fatal to the adult in the middle periods of life. In the senile, however, and especially if epidemic cholera prevail, it is to be dreaded, as it may run to fatal termination by exhaustion, or by the true collapse of cholera. The only fatal cases that we have seen in adult subjects, occurred amongst

persons of over sixty years of age, in whom the disease, notwithstanding it might be occasionally or temporarily checked, or, indeed, seem to be overcome, would yet recur and reduce the patient by a mere bilious profluvium. In the middle periods of life, it occasionally degenerates into ileo-colitis, sometimes with gastro-ileitis, and proves fatal. As a general remark, the disease, during its brief reign in the summer months, subjects a very large proportion of the male adult population to its sway, this being apparently due to their greater exposure to the summer heat. It is, when mild, sometimes considered to be a constitutional effort at accommodating the system to the new state of atmospheric circumstances coincident with the advent of the summer months. In its mildest form, it consists of two or three pultaceous or semi-fluid dejections daily, of vitiated bile, of a dark green or nearly black color, passed with tenesmus, and preceded by tormina. Anorexia, slightly furred tongue, disagreeable taste, slight indigestion, with temporary headache or vertigo, and sense of uneasiness in the loins, form the sum of its usual symptoms. The pulse may be but little disturbed; seldom is there irritative fever. Sallow and icterode conjunctiva also attend it. In this, its usual form, the disorder may attack its subjects but once in the season, continue one, two, or three days, and disappear, without any medication being requisite beyond a simple regulation of diet consisting of adherence to the farinacea and strict avoidance of meat and spices. Often, however, it recurs in the same subject at intervals, continuing to repeat its visits every few days, or weeks, while summer lasts, requiring, perhaps, no other than the above treatment. Sometimes, it persists day after day, digestion becoming more and more disturbed, the dejections more frequent, the general malaise and sense of feebleness with pain, or sense of soreness in the posterior muscles of the thighs manifest themselves, and irritative fever will now attend. Seclusion from the solar rays, rest and abstinence, may yet prove curative, without other measures being adopted; generally, however, a few mild, alterative doses of a mercurial combined with opium, will be required to arrest it. These doses, repeated three or four times at intervals of four hours, restrain the dejections for 12 or 24 hours, then, producing two or three jelly-like discharges of vitiated bile, the bowels resume their normal state, to continue permanently in that state, or be again disturbed by renewed exposure to the causes of the disorder. Persistence in the use of animal food, especially if it be salted, increases the liability to the disorder, and

aggravates it when once established. Alcoholic drinks also aggravate it, so, also, will ale and beer. The best preventive and curative in mild cases is good porter or brown stout. This acts as a diluent, protecting the irritable mucous coat of the intestines from the contact of the vitiated bile, as a pro-bilious alterative, by reason of its bitter properties correcting the redundant secretion of the liver; and, as a mild, stimulating diaphoretic, it modifies that abnormal state of the cutaneous functions, which is the first link in the morbid catenation which makes up the disease.

Except in the extremes of life, bilious diarrhœa is seldom fatal. In the senile, it may exhaust the vital powers by the mere bilious profluvia it occasions. If fatal to the vigorous in the adult or middle periods of life, it is generally owing to the supervention of colitis. We have, however, known instances in vigorous manhood in which cerebral symptoms supervened on the disease, the patients perishing with coma, the febrile symptoms that were manifested leading to the suspicion that a blood poison was the cause of death. When it is interfused with dysentery, the dejections show a redundancy of vitiated bile with mucus and blood mingled in them; the compound disorder is then intractable, and, with some practitioners, is known as bilious dysentery. In such cases, we will have colitis, with more or less implication of the mucous coat of the small intestines and stomach. In infants, the disease is, as we have remarked, very often associated with, or rather is the *prodrome* of cholera infantum; in many instances, it presents the same complications and modes of termination as are witnessed in the adult subject. Its mortality is small, its prevalence is great, its exact statistics are unattainable.

Cholera Infantum.—This disease, one of the most prevalent amongst our infant population in the summer months, prevailed in this year, commencing in the warm weeks in May. It varied in its range with the fluctuations of the thermometer, was influenced by humidity, and aggravated by the existence of the cholera cause. It was, however, less prevalent than in 1850, and less fatal. Its maximum rate of invasion was, this year, in July; its mean range in August was much lower than in August, 1850; and its decline in September was more rapid and signal than in 1850. Occasionally it proved rapidly fatal in this as in other cholera years, terminating with all the signs and symptoms of Asiatic cholera. If doubt exist as to the liability of the infant subject to

cholera Asiatica, it can be set at rest by the fact, often attested in St. Louis, in the hospitals, and at quarantine, of its occurrence at that period of life with the same symptoms as in the adult, even the cramps, blueness, suppressed urine, aphonic cry, and subsequent choleraic fever. From our observations of the disease in the infant subject, we are led to the opinion that, in these cases, the tendency to marked implication of the brain in the early stage of the disease, is very prominent. We have seen convulsions often associated with it before the choleraic symptoms had continued three hours. Of one fact, we are convinced, namely, the intolerance of the infant subject to opium in this disease. Of the truth of this, we had ample evidence in cases occurring in St. Mary's Female Orphan Asylum in this and other years.

Cholera infantum, within our experience in this section of country, presents variations from its rôle, as observed in the country, on the Atlantic coast. It is less active in its febrile type, not so much from any reduction or variation in the thermometric range that originates and influences it, as from the constitutional proclivities to disease observed in an infant population, and the endemic causes to which it is here exposed. The causes that, in this section of the West, operate on the adult, producing our climate fevers, influence the infant subject; hence, in this disease, periodicity, more or less marked, is observed in the febrile movements, and a tendency to exhaustion is apparent. The proclivity to tuberculous meningitis is great in our infant population, and in this, and like summer diseases, the supervention of "head symptoms" is very common. The general constitution of the human subject in the valley of the western rivers, is manifestly influenced by causes which give it less the appearance of vigorous ruddy health than is observed in the inhabitants of the Atlantic coast. These causes, operating from the cradle to the grave, influence more or less all our diseases, and, in the disorder under consideration, create a less active type of symptoms, and undermine the constitutional power of resistance to its morbid effects. The local remoræ of blood which occur in cholera infantum here, will not bear, as a general practice, the abstraction of blood for their relief; they are more under the control of revellent remedies, not of a depletive kind.

A form of constitutional irritation to which we may, without being misunderstood, apply the conventional term "malarious," occurs in our district, simulating cholera infantum, and is recorded in its name in the weekly mortality reports. It presents the usual

gastric and intestinal symptoms of cholera infantum, as observed in other sections of the United States. The febrile movements, however, are more recognizably periodic, or, if not distinctly periodic, are yet sub-intrant or intercurrent in their paroxysms, or a wavy, obscure, irritative attends; the surface at one hour being cool, relaxed, and moist; at another, being dry, warm, and harsh, or, perhaps, the general surface will present the concomitants of "irritation" with an exhausted state of the vital powers, the extremities being cool or cold, the face pallid and sallow, the skin on the forehead tense and shining, its venous courses turgid, and arteries beating irregularly; one moment with spurious fulness, at another with marked feebleness and irregularity. The state of the nervous system, in this form of disease is obtunded sensibility, the patient is not so irritable or fretful as somnolent, it may be readily aroused, and its attention briefly directed to any accustomed object; but it will soon relapse into impassiveness or somnolency, as though rest were the desired state. The pupil of the eye is contractile to light, but dilated at the moment the patient is aroused. The globe of the eye is upturned and the lids are semi-apart, while the patient is passive or somnolent; but when aroused, the power of the will over the motions of this organ is yet perfect. The fontanelle is now depressed, but becomes distended as disease advances. The general condition, in this stage of the disease, is one of irritation with exhaustion. We have a passive congestion of the brain, depending on, or, if you please, associated with, debility, but a congestion which yet maintains its tendency to terminate in serous effusion from the meningeal vessels. It is a congestion dependent upon defective contractility of the vascular coats, the most important curative of which is quinine assisted by nutritive and sometimes by alcoholic stimulants, and by blistering.

There are cases, however, the pathology of which is not so susceptible of a facile analysis as the foregoing cases, in which signs of subacute meningitis are early associated with the symptoms of cholera infantum, but in which the vital powers are depressed, and we will have the concurrence of subacute hyperæmia with circumstances that forbid depletion. The curative difficulty, in such instances, is to know how properly to mingle, to alternate, or place in due succession in the treatment two opposite elements, one to abate the existing hyperæmia, the other to support the sinking general powers. We have known cases similar to those we have described as resulting from malarious "irritation," depart from their

simplicity as they advanced, and present signs of subacute meningitis; the patient finally perishing with evident indications of effusion, the result of undue vascular excitement in the circulation of the brain.

Monthly Table of Mortality in St. Louis in 1851, *by Cholera Infantum, Dentition, and Marasmus.*

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Cholera infantum and teething	4	1	3	5	14	68	115	79	24	26	5	3	347
Marasmus . .	1	4	2	3	1	5	18	14	5	3	10	1	67
Total of these diseases													414

	Per cent.
Ratio of total to entire mortality of the year . . .	9.45
" " " of 5 years and under .	23.69
" " population	3.09

[We have not the time at our command to complete our intended remarks on the infantile mortality of this year, and must refer our readers to an article on the mortality of the year taken from the *St. Louis Medical and Surgical Journal*, which is to be found in the Appendix to this report.—R.]

We here notice *dentitional irritation* as a cause of infantile mortality, for indefinite as the term is, so far as it may be assumed to point to any special pathological rôle, or to any special succession of symptoms of disease, it is yet allied in its relations to the intestinal affections to which we have referred, and to affections of the nervous system of which we intend speaking hereafter.

Teething is entered in the mortuary record in St. Louis as one of the principal sources of infant mortality. The enumeration of death by it has been increased in every year that cholera has prevailed. Its subjects may be set down as perishing of intestinal affections identical with cholera infantum, diarrhœa, or dysentery, or of the chronic form of intestinal disorder termed marasmus, or they perish of true meningitis.

In this connection we also refer to *marasmus*, one of the sources of infantile mortality. The term is very indefinitely used in mortuary statistics, being the registration of the terminal stage of diarrhœa and cholera infantum, of infantile remittent fever, and of true tuberculous or strumous degeneration of the mesenteric glands. We connect the mortuary statistics of this and the foregoing subject with the statistics of cholera infantum, to show the influence of our

summer heats, and the cholera cause upon the entire infant mortality.

FEVERS.—The most uniformly prevalent fever in this year, so far as regards its existence in every month, is continued or typhoid fever. Under the head of continued fever, however, must be included the few cases of true typhus that occur amongst the immigrant population. In general, the term typhoid is applied to continued fever when complicated with enteritic lesions, the term typhus being retained to nominate that form in which cerebral lesions predominate without enteritic lesions, and in which there occasionally occur implications of the pulmonary organs. The term typhoid is, also, sometimes applied to designate the terminal stage of an autumnal endemic fever of a periodic type, in which the distinct paroxysmal type becomes ultimately absorbed or lost in the continued febrile movements established by the supervention of acute or subacute inflammatory lesions, with nervous lesions, terminating the pathological rôle. An exact distinction then is not made in this part of the country between these several different forms or types of fever, so far as regards the terms used to designate them.

CONTINUED FEVER, as recognized in the term typhoid, is of recent origin in our district, its recognition previous to the past twelve or fourteen years being seldom admitted. Within that time, however, its existence has been well marked, and it is evidently on the increase from year to year, seemingly disposed to be substitutive in some degree of our periodic fevers. We have heard no remark regarding our fevers oftener made by physicians in different parts of the State than that which refers to the evident annual increase of continued or typhoid fever over the ordinary endemic or bilious fever of the country, the former being disposed, as it were, to displace the latter as the improvement of the agricultural districts advances.

As seen in our district, typhoid fever, or the fever to which we have reference under such title, in its inception resembles ordinary bilious fever. It is, indeed, often designated typhoid remittent, or typhoid bilious fever. Malaise, anorexia, disagreeable taste, white and slightly furred tongue, disturbed digestion, irregularity of the bowels, sense of muscular soreness and feebleness, variable pulse, dulness of intellect, cephalalgia, vertigo, &c., precede or accompany its commencement. Chilliness and sometimes decided rigor occur, leading perhaps to the suspicion that intermittent or remittent fever is approaching. The muscular soreness or pain is sometimes, like

that of rheumatism, being chiefly felt in the joints, or it may be along the greater nervous distributions, down the back, along the posterior part of the thighs and legs, or along the arms. The chilliness lasts an indefinite or variable period, being sometimes brief, sometimes protracted, yet light for a few hours; sometimes it alternates with flushing of heat. It may be temporarily obviated by measures that retain the animal temperature and exclude the influence of external refrigerating causes. Nausea sometimes occurs in this forming stage of the attack; occasionally there will be vomiting even of bile. The stage of chilliness usually occurs at the early part of the day; sometimes it sets in in the evening or at night; sometimes, as we have remarked, it is brief, and approaches the condition of rigor, and reaction will promptly supervene. In this cold stage, the general surface is cool, the temperature of the extremities is below that of the body, the head is often warm, even hot. The pulse is always disturbed, being usually quick, frequent, and feeble, beating from ninety to one hundred and twenty per minute. We have, in some instances, however, observed it but little removed from the normal standard of frequency, beating at eighty or eighty-five per minute, with *pseudo*-fulness, the calibre of the vessel enlarged, but compressible.

Reaction supervenes upon the stage of chilliness, generally occurring towards evening, the vascular excitement and febrile heat being maintained, or exacerbated during the night, perhaps delirium will now attend. Insomnia or disturbed sleep will also occur. The surface towards morning becomes moist, the symptoms of the previous night diminish, and an imperfect febrile remission is apparent. The pulse, however, in the remission, will be frequent and sharp, and listlessness, or dulness of the faculties, will persist, being more marked in this form than in bilious remittent fever. Diaphoresis or moistness is not diffused over the entire surface with the febrile remission—it will fluctuate as to time, one moment appearing, then subsiding, or it is confined to but a part of the body, perhaps to the head and neck. Thus passes the first day of the disease.

The second day presents the same rôle of symptoms as the first, the chilliness, however, is absent, or recurs in a less marked degree than on the previous day, and its time of return may vary from the day before. Perhaps the paroxysm of symptoms will be later in commencing or in increasing, and may be lighter than that preceding, and appearances are in favor of the disease being a double tertian intermittent, somewhat irregular in its display. The remis-

sion of symptoms on the third day may be more perfect than that of the second day, and the exacerbation of the previous night not so intense as on the first night. The febrile reaction on the third day, however, will be generally more exacerbated than on the preceding days, and the seemingly paroxysmal type of the disease will now be lost, or if remissions occur, it will be at irregular hours of the day, and at irregular intervals, two or three or four days elapsing sometimes without any remission in the febrile symptoms being observed. The remittent type, however, is sometimes retained even to the fifth or seventh day; on the other hand, it may not appear after the first day; generally, however, the delusion as to the fever being remittent is maintained to the third day. The progress of symptoms after that time may be illustrated by the following details of a case taken from among many recorded in a case-book.

Subject, ætat. 20; female. Symptoms for the first three days as above described. Fourth to eighth days, those of continued fever; no morning remission apparent since the third day; delirium at night; skin burning hot, dry and harsh; pulse 112, full, soft; tongue slightly moist, covered in centre with thin white fur, its edges red, extremity pointed, protrusion slow, imperfect and tremulous, the edges upturned, centre depressed or cupped, tenderness of umbilical region, slight diarrhœa, appearance besotted. Ninth day, general symptoms as yesterday; pulse small, unequal, 112 per minute; expression stupid, eyes dull and slightly injected, face suffused a dusky red, sense of exhaustion great, tongue contracted, dry, and shrivelled, edges red, pointed, central portion still white-coated, papillæ salient, subsultus, muttering delirium; patient soporous, but readily aroused, answers questions coherently when aroused, no pain complained of, vertigo on rising, urine scanty and high colored, yellow diarrhœa, tenderness in right iliac space. Tenth day, symptoms as yesterday, gums pink, and firm, no sordes, lips dry and fissured. *Nocte*, nervous lesions aggravated, general muscular tremulousness, tinnitus aurium, deafness, bowels restrained, febrile symptoms increased. Eleventh day, crepation of symptoms; pulse 120, small and feeble; tongue becoming darker in the centre, bowels again loose, dejections yellow fluid. Twelfth day, somnolency, almost stupor, face pallid, body attenuating, muscular exhaustion great, much jactitation, extremities cold; pulse feeble, irregular, 125; tongue black, dry, glazed, fissured, red-edged, pointed; sordes accumulating, vertigo and deafness increased, delirium diminished as stupor increased; eyelids semi-

apart, globes rotate spasmodically during sleep, pupils vibrating, expression dull, coma alternating with temporary excitement, respiration frequent, irregular and suspirous, with stertor, action of heart tremulous, parietes of chest vibrate from its impulses, epistaxis. Thirteenth day, *Mane*, slight remission of symptoms, pulse less feeble, 100 per minute, soft; skin cool and moist; but two dejections from bowels in 24 hours. General symptoms improved. *Nocte*—febrile exacerbation. Fourteenth day, symptoms exacerbated during the morning; *post meridiem*—free sweating, skin warm, pulse fuller, soft, and 100 per minute; an irregular remission; exacerbation again at night, bowels again loose. Fifteenth day, symptoms as on previous day. Sixteenth day, *Mane*, skin cold and dry; pulse small, feeble, irregular, 120 per minute; extremities tremulous, no delirium, faculties dull, tendency to sopor diminished, sense of muscular feebleness great; profuse hemorrhage from the bowels supervened during the day, unattended with pain or tenesmus; abdomen much distended; surface cold and clammy; pulse very feeble, frequent, and irregular. It will be unnecessary to trace the progress of the case further, as we have already stated sufficient to give a general idea of the symptoms. Referring the hemorrhage to ulceration of the bowels, the practice adopted was to paralyze the peristaltic movements, with a view to give nature a chance of closing the ulcerated points by plastic exudation. Three grains of opium, with two of acetate of lead, were administered every three hours for one day; the opium was then reduced to two grains, and continued every third or fourth hour, p. r. n. for several days, and nutritive stimuli were exhibited. The record, on the 23d day of the case, states the condition of the patient to be improved; skin warm and soft; pulse 80, full, round, and soft; tongue clean but very pale, appetite improved, feebleness diminishing, no alvine dejection since the 18th day; an enema now exhibited, produced a copious dejection of scybalous, dark-colored fecal matter. From this date the patient slowly recovered under the exhibition of the citrate of iron and quinine.

An idea of the general range of the symptoms in cases of typhoid fever, may be taken from the case we have detailed. The disease, however, varies in different subjects in the time occupied by the evolution of the various symptoms—in some terminating on the 14th, 17th, or 21st days; in others, extending itself over four, five, or even six weeks. Its proportionate mortality, we have no means of determining accurately, but it is more frequently fatal than our

bilious remittent fevers. In the variable months of spring and autumn, it is occasionally complicated with pneumonic symptoms; oftener, however, its complication is bronchitis; in rare instances, pleuritis. In the winter months, it is more liable to those pulmonary complications constituting that form of disorder popularly known as "winter fever."

The general conclusions we would advance in regard to the disease as noticed by us in this section of the west, are, that typhoid fever, analogous in its general symptoms, and to some extent in its pathology, to the disease described by the French authorities, prevails in this part of the country, and is annually increasing, superseding to some degree our endemic bilious fevers; that it is influenced, to some extent, by the causes that produce our bilious fevers, and for that reason, often manifests marked morning remissions, and evening or nocturnal exacerbations in its symptoms; that its most prominent lesions are found in the mucous coat of the intestinal tube, but not invariably in the solitary and conglomerate glands; that cutaneous eruptions, either of petechiæ, vibices or "*tâches rouges*," are frequently seen in the disease, but are by no means its invariable accompaniment; that the date of time in the fever, at which the enteritic complications and cutaneous eruptions appear, is liable to great variation; that, in some instances, this form of fever often supervenes in well-marked regular bilious remittent fever; that, in other instances, the symptoms of the two diseases (bilious remittent and typhoid fevers) are so interfused as to render the distinction as to which form of fever predominates, a matter of difficulty, if not a matter of impossibility.

Treatment.—Our remarks on this topic shall be brief, and are made to notice two methods of treatment that are in vogue here, one of which is expectant, the other may be termed the abortive method. The former consists in treating the symptoms of the fever as they arise with saline diaphoretics, refrigerants, and perhaps mild laxatives, the complications, as they supervene, being met by a cautious employment, occasionally of local depletion, more frequently of blisters and the use of laxatives, anodynes, and such other remedies as the circumstances of the case may indicate. A milder expectant course even than this is sometimes adopted, consisting of the employment of diluents with scarcely any other medication than the adventure of a saline diaphoretic. This course is based on the assumption that the disease is self-limited, that it will run a definite course, present nearly an uniform series of pa-

thological changes, that can be but slightly, if at all, abridged by art, and that death or recovery will take place as it may please nature to select. That the physician is sometimes cast upon a very limited combination of curative resources in this disease, is true, especially of cases wherein it appears as simple fever, uncomplicated with any marked local lesion, and of a type purely continued fever. Here no indications exist that can be confidently obeyed, the nature of that disease termed simple fever being too obscurely comprehended, if it be at all understood, to afford definite ideas as to the manner its cure is to be effected. But in typhoid fever, which tends almost always to the superinduction of an entire complication, art is of some avail. It is the local complications that are the source of danger to the patient, and these can be modified and restrained in their progress. Cautious topical depletion, where the general strength and well sustained state of nutrition will admit of it, is of avail, and the effect of the remedy can be assisted if it be followed by the employment of topical revellents. The mucous enteritis, when existing, may be further influenced by mild mercurials, in small alterative doses, combined with anodynes in the early stage; later, the tendencies of the inflammatory process to result in suppuration, and eventually in ulceration, must be held in view, and the indications then will be to alter the morbid state of the mucous coat by agents that modify its secretion and influence the local nutrition of the diseased part. We can effect something in this stage by mild laxatives, combined with, or succeeded by, anodynes; and if suppuration or ulceration exist, the mineral astringents will tend to alter the morbid process. Anodynes may be even freely given in this stage, for we have often seen that the nervous lesions, which are sometimes excessive, depend more on a neuropathia, which can be allayed by nervous sedatives, than on cerebral hyperæmia that is increased by them. Even now, if the nutritive powers are depressed, or the general vital energies are failing, or later in the disease, when these circumstances will attend, nutritive stimuli may be employed, indeed they are requisite to aid the local curative changes in the diseased part, or the plastic changes that must there occur in order that the local complication may be restored from the state of disease to that of health. They are needed likewise by the general system under the reducing effects of the disease. We have seen cases of immigrants, in which a continued fever with typhoid symptoms becoming complicated with the signs of ileitis on the 7th, 8th, or 10th day, yielded prompt-

ly to a few doses of blue mass, with Dover's powder and krameria (given to alter the local morbid process, and restrain the action of the bowels), followed by or alternated with the use of porter, and this so frequently, and so often in contrast to what we have observed of the more passive methods of treatment, as to convince us that the disease can be limited by art. The abortive method of treatment consists in placing the patient, early in his attack, under the influence of quinine, to interrupt the morbid catenation that constitutes the disease; a plan of treatment extensively applied and ably advocated by Dr. E. D. Fenner, of New Orleans. We have but little testimony of a positive and satisfactory character beyond our own experience to offer as to the relative merits of the expectant and abortive methods of treatment. The communications that we have received from different sections of the State, speak of the efficiency of quinine in the so-called typhoid fevers, but the details of the manner in which the remedy is employed are not given in such form that deductions can be offered from them. Our own experience enables us to attest the superiority of the quinine treatment in many instances, but the results in our hands have not been as fully encouraging to us as those we witnessed in the wards of the Charity Hospital in New Orleans, in charge of Dr. Fenner; we must acknowledge, however, that our experience with the remedy has not been as ample as that of Dr. F. We have seen the fever successfully subjugated in its early stages by quinine; we have, on the other hand, seen the disease evidently exasperated by it. We have known the quinine prove injurious in the early stage of the disorder, and very promptly efficient in the same cases at a later period. We have, in some instances, seen but negative results from its employment. We have been led to certain deductions in regard to its use, and to these we now adhere. If in the early stage of the disease, we find but slight reason to apprehend follicular enteritis, if there be a moist state of the tongue, and an occasional tendency to moisture of the general surface, and especially if a remission of symptoms be noticeable in the morning, we test the curability of the case by quinine, exhibiting it in combination with Dover's powder or opium. In the exhibition of mercurials alternately with or combined with the quinine, we are guided by the same circumstances as Dr. Fenner. If diaphoresis is maintained by the remedy, and the nervous lesions are not exasperated, we persist in its prescription, with the expectation of its proving successful. We maintain the influence for two, three, or four days,

or until an evident return of functional balance in the system recurs, omitting the mercurial when its probilious effect is established. On the other hand, if, as sometimes occurs, the skin becomes hot and dry under the use of the quinine, the delirium, jactitation, and subsultus increased, and the tongue takes on a dry, red-edged, and pointed appearance, we are then convinced that the remedy is not appropriate to the case, and withhold it for a more opportune moment. Later in the disease, the return of moist and cool surface, with the tongue moist and clearing off of its fur from the edges, and especially if remission of the general symptoms occur, we again resort to the quinine, continuing it with opium and ipecacuanha. We now expect that, the local lesion in the intestines being subdued, the febrile element in the disorder will give way under the sedative influence of the combination, the irritated play of the heart and arteries be checked, the nervous excitation be subdued, the secretions be restored, and general nutrition be improved. We believe the disease depends on a blood poison; that the local lesions which complicate it are secondary or consecutive to the morbid state of the blood, and we know of no remedy more efficient in opposing pyemia and analogous septic conditions of the blood than quinine. It is not the sulphate of that alkaloid to which we give the preference in treating typhoid fever, but the ferro-cyanate. This salt is more promptly sedative in its influence over the circulation than is the sulphate of quinine, and is not so liable to induce the peculiar and often distressing neuropathia of quinine, that results from the full exhibition of the sulphate. Idiosyncrasies that do not tolerate the sulphate, will readily endure the full effects of the ferro-cyanate, and we have often found that subjects who will not tolerate a quinine salt uncombined, will sustain its use without inconvenience if it be combined with opium. We have been taught by experience to discard the use of small doses of quinine in this fever, having often witnessed irritant effects on the nervous and vascular systems to result from their use, which on a change of the larger doses, are no longer perceptible.

(The intercurrence of cholera and typhus was well marked in cases occurring this year under our notice in St. Mary's Female Orphan Asylum. The subjects attacked first complained of vertigo; no diarrhœa preceded this symptom; syncope, more or less marked, then occurred, followed by vomiting, purging, cold and inelastic surface, ischuria, cramp, &c.; in short, cholera, with its stage of collapse, was the opening stage of the disorder. There was a remark-

able want of correspondence between the prostration and amount of discharges, the prostration being intense, the profluvium not great enough to account for it. In some cases, convulsion preceded syncope. In all that reacted, the choleraic typhoid fever was protracted. In the first cases, opium was employed; it deepened the stupor in these to a notable degree compared with those in which it was not used, and they were the only fatal cases. The treatment of the subsequent cases was the mustard emetic, followed by saline solutions, the carbonates of ammonia and soda, with oxymuriate of potash. The outbreak of cholera and typhus lasted in the institution for two weeks; subsequent to this, cases of typhoid fever occurred among the inmates.)

Periodic Fevers.—The most prevalent fevers to which the adult is subject in our climate, are those known under the title of bilious fever, bilious remittent fever, intermittent fever, and congestive fever. It is these that constitute a large proportion of the physician's business in the summer and autumn months. Bilious, or bilious remittent fever, appears in June—persists during July, and abates in August, when it is displaced by climatic fever of the intermittent type. In some years, the remittent form gives way to the intermittent even in July, but it is almost invariably the case that intermittent predominates in August and September. These different types are here generally viewed as results of the same endemic or climatic causes; the two forms being interlaced, often prevailing together in the same season, and their types are convertible in the same subject from one into the other. Often what is sometimes termed a remittent fever, is really a subintrant intermittent, with the cold stage suppressed, or imperfectly displayed.

The subject of these fevers, in all its various bearings as to prevalence, causation, variation and conversion of form or type, and complications, has been so ably discussed in Drake's monumental work on the prevailing diseases of the interior valley of North America, that we are indisposed to occupy time by any disquisition upon the details that have been amassed by the patient and earnest labor of the distinguished author of the work referred to. We shall, therefore, content ourselves with presenting the annual mortality by these forms of fever, and, in connection with it, refer our readers to Dr. Engelman's appended paper, at the close of our report, on "The Meteorological Causes of our Climate Diseases." We may here remark that the term "congestive fever" has, with a great number in

our section, no fixed meaning or application, further than that it is applied to designate the fatal forms of autumnal fever, whether remittent or intermittent. When properly limited in application, it belongs to the algid form of intermittent fever, which, within our observation, is invariably a subintrant, double tertian fever, the paroxysms coalescing with each other, and often presenting some aberration from the simple form of intermittent, as, for example, in the apparent absence of a regularly recurring cold stage. It is, properly, the pernicious fever described by Alibert and other French and Italian authorities.

Table showing the Mortality by Remittent, Intermittent, and Congestive Fevers during the year 1851, *together with the Age and Sex of the Subjects.*

	UNDER 10 YEARS.		10 TO 20 YEARS.		20 TO 30 YEARS.		30 TO 40 YEARS.		40 TO 50 YEARS.		50 TO 60 YEARS.		AGE UNKNOWN.		TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
January . . .	2	...	...	...	1	...	...	...	...	...	2	...	...	...	5
February . . .	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
March	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
April	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
May	1	...	...	1	3	...	1	...	...	1	3	...	...	...	10
June	...	...	...	...	2	1	1	...	1	...	1	...	1	...	7
July	...	...	1	...	4	3	3	2	1	2	2	2	5	1	26
August . . .	1	1	...	1	8	3	4	1	2	...	1	1	5	...	28
September . .	1	2	2	...	4	3	6	1	3	...	6	2	5	...	35
October . . .	3	1	...	1	8	2	6	2	2	...	1	1	5	1	33
November . .	1	...	1	...	3	1	1	...	...	...	2	1	2	...	12
December . .	1	1	...	...	...	...	1	...	2	...	1	...	2	...	8
	10	5	4	3	35	13	24	6	11	3	19	7	25	2	167

Mortality by bilious, intermittent, and congestive fevers, form 3.81 per cent. of the entire mortality of the year.

RATIO OF MORTALITY BY ABOVE FEVERS IN ENTIRE POPULATION.

	Per cent.
Ratio of subjects under 10 years of age to population of same age	0.062
" from 10 to 20 " " "	0.038
" " 20 to 45 " " "	0.016
" " 45 and over " " "	0.420

From the above, it appears that the relative mortality of climate fevers is the lowest form of any mortuary cause until middle age is reached, when the mortality is largely augmented.

Weekly Meteorological Table for St. Louis, for the months of April, May, June, July, August, and September, 1851. Observations made by GEORGE ENGELMAN, M. D.

1851. WEEK.	BAROMETER—CORRECTED FOR TEMPERATURE. ENGLISH MEASURE.						
	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Lowest.	Highest.
Mar. 31 to April 6	29.451	29.478	29.431	29.383	29.436	28.765	29.746
April 7 to " 13	29.643	29.647	29.565	29.612	29.617	29.119	30.005
" 14 to " 20	29.430	29.453	29.413	29.439	29.434	29.061	29.668
" 21 to " 27	29.549	29.569	29.500	29.518	29.534	29.372	29.788
" 28 to May 4							
May 5 to " 11							
" 12 to " 18							
" 19 to " 25	29.438	29.439	29.397	29.422	29.424	29.095	29.744
" 26 to June 1	29.454	29.489	29.410	29.436	29.447	29.314	29.572
June 2 to " 8	29.320	29.336	29.301	29.306	29.316	29.096	29.533
" 9 to " 15	29.461	29.514	29.483	29.498	29.489	29.408	29.578
" 16 to " 22	29.441	29.457	29.566	29.438	29.478	29.248	29.625
" 23 to " 29	29.351	29.372	29.313	29.346	29.345	29.033	29.514
" 30 to July 6	29.442	29.468	29.425	29.349	29.421	29.282	29.570
July 7 to " 13	29.410	29.451	29.401	29.431	29.423	29.304	29.604
" 14 to " 20	29.415	29.434	29.400	29.412	29.415	29.287	29.602
" 21 to " 27	29.484	29.520	29.439	29.433	29.469	29.328	29.592
" 28 to Aug. 3	29.393	29.407	29.364	29.406	29.392	29.206	29.577
Aug. 4 to " 10	29.483	29.535	29.462	29.477	29.489	29.320	29.612
" 11 to " 17	29.418	29.465	29.412	29.446	29.435	29.229	29.591
" 18 to " 24	29.457	29.484	29.424	29.439	29.451	29.294	29.600
" 25 to " 31	29.506	29.557	29.500	29.533	29.524	29.354	29.649
Sept. 1 to Sept. 7	29.516	29.551	29.473	29.482	29.505	29.373	29.619
" 8 to " 14	29.543	29.578	29.513	29.545	29.545	29.474	29.704
" 15 to " 21	29.661	29.682	29.618	29.623	29.646	29.468	29.795
" 22 to " 28	29.549	29.580	29.510	29.550	29.547	29.332	29.711
" 29 to Oct. 5	29.546	29.590	29.527	29.444	29.527	29.420	29.691

Weekly Meteorological Table for St. Louis—Continued.

1851. WEEK.	OPEN AIR THERMOMETER. FAHRENHEIT.							CLEARNESS OF SKY.					NO. OF DAYS.		
	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Lowest.	Highest.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Fair.	Variable.	Overclouded.
Mar. 31 to April 6	44.7	49.6	59.6	51.7	51.4	34.5	70.0	3.4	5.0	4.7	6.1	4.8	3	3	1
April 7 to " 13	46.1	53.4	60.9	48.1	52.1	41.0	69.0	5.0	7.1	6.0	5.0	5.8	4	2	1
" 14 to " 20	41.4	50.5	56.7	48.2	49.2	37.0	64.0	6.7	5.3	4.0	8.7	6.2	3	3	1
" 21 to " 27	46.7	57.7	67.7	53.6	56.4	37.0	76.0	8.1	8.3	7.3	7.9	7.9	6	0	1
" 28 to May 4	43.7	52.6	58.6	48.1	50.8	29.0	67.0	3.9	5.1	6.1	7.0	5.5	2	5	
May 5 to " 11	55.6	67.1	77.1	66.4	66.5	37.0	90.5	6.0	3.0	5.0	4.0	4.5	1	6	
" 12 to " 18	64.0	73.0	80.2	67.3	71.5	56.0	91.0	5.5	4.4	3.2	5.0	4.5	2	4	1
" 19 to " 25	61.4	71.1	79.2	66.1	69.5	51.0	87.0	4.6	5.7	6.6	8.2	3.5	4	2	1
" 26 to June 1	69.3	82.3	88.4	73.5	78.4	67.0	92.0	6.7	7.1	6.6	8.6	7.2	4	3	
June 2 to " 8	67.9	70.9	77.9	67.9	71.1	61.0	85.0	2.4	3.3	4.7	3.0	3.3	2	4	1
" 9 to " 15	63.9	71.2	76.4	67.4	69.7	54.5	82.0	2.7	2.3	4.1	3.1	3.0	2	2	3
" 16 to " 22	67.6	75.3	82.4	70.5	73.9	65.0	86.0	3.9	3.7	4.4	6.0	4.5	2	5	
" 23 to " 29	67.2	78.1	85.4	71.6	75.6	62.0	92.0	8.4	7.6	6.4	6.1	7.1	4	3	
" 30 to July 6	64.9	71.6	78.4	70.6	71.4	54.0	89.0	4.7	4.6	4.9	4.9	4.8	2	5	
July 7 to " 13	71.8	82.9	89.8	77.6	80.5	66.0	95.5	6.9	7.0	6.1	8.0	7.0	6	1	
" 14 to " 20	70.0	82.4	86.5	74.4	78.3	62.0	97.0	7.6	7.1	6.6	9.0	7.4	5	2	
" 21 to " 27	69.6	79.9	89.3	76.8	78.9	63.0	96.5	6.6	5.6	5.7	6.4	6.1	4	2	1
" 28 to Aug. 3	70.2	79.1	85.7	72.4	76.9	64.0	95.0	3.9	4.4	4.4	4.3	4.2	3	4	
Aug. 4 to " 10	68.8	79.1	79.2	73.1	75.0	63.5	88.0	4.3	2.1	3.0	4.4	3.4	0	6	1
" 11 to " 17	71.6	80.1	86.6	75.5	78.5	64.0	94.0	4.9	5.9	4.9	6.9	5.6	3	4	
" 18 to " 24	66.2	75.1	83.0	70.2	73.6	64.0	90.0	6.1	5.1	5.9	6.9	6.0	4	2	1
" 25 to " 31	67.4	76.3	81.9	72.7	74.6	61.0	86.0	5.6	4.4	4.6	6.1	5.2	2	5	
Sept. 1 to Sept. 7	71.9	82.6	91.9	77.5	80.9	69.0	94.0	9.5	9.3	9.1	10.0	9.5	7		
" 8 to " 14	73.0	81.1	86.6	75.3	79.0	65.0	93.0	8.3	7.0	5.9	7.0	7.0	5	2	
" 15 to " 21	62.0	69.6	80.1	69.0	70.2	55.5	83.5	5.3	5.3	5.1	8.0	5.9	3	4	
" 22 to " 28	54.3	62.1	69.5	56.6	60.6	37.0	87.0	6.1	7.1	7.0	7.6	6.9	5	1	1
" 29 to Oct. 5	51.3		74.4	58.4		41.5	81.5	8.0	9.1	9.7	8.4	8.8	7		

Weekly Meteorological Table for St. Louis—Continued.

1851. WEEK.	RAIN. Days.	RAIN. Hours.	RAIN. Quantity.	THUNDER-STORMS.	WINDS DURING WEEK.[1]
Mar. 31 to April 6	3	8½	0.93	2	N.E. 2, S.W. & W. 3, S. 2 3, W. 4 5 2.
April 7 to " 13	3	19½	1.74	1	W. 4 3, S. 2, N. 3 2, N.E. 2, S.E. 2, W. 3.
" 14 to " 20	1	5	1.00	1	N.W. 3, E. 2, S. 2, W. 2, N.W. 3, N. 3.
" 21 to " 27					N.W. 2, S.W. 2, S.E. 2, W. 3.
" 28 to May 4	1	4	0.38		N.E. 2, W. 5 3 2 4, S.E. 2, S.W. 2, N.W. 3.
May 5 to " 11	1	1	0.05		S.E. 2 3, S. 3, S.W. 3.
" 12 to " 18	3	10¼	2.78	3	N.W. 2, N.E. 3, S.E. 3, S. 3, S.W. 2, S.E. 2.
" 19 to " 25					W. 3, S.E. 3, S.W. 4, N.W. 4 3, E. 2, S.E. 2.
" 26 to June 1	1	½	0.10		S.W. 2, S.E. 2 W. 3, S.E. 2, S.W. 2.
June 2 to " 8	3	6¾	2.11	5	N.E. 2, S.W. 3 2, W. 4.
" 9 to " 15	3	8	2.17	6	N.W. 3, S. 3, S.E. 2, N.E. 2, S.E. & E. 2.
" 16 to " 22	2	2¼	0.75	2	N.E. 2, S.E. 2, S.W. 2, S.E. 2, W. 3.
" 23 to " 29	2	2	1.15	3	N.E. 2, S.E. 2, W. 4, S.E. 2 3, W. 4, S.W. 2.
" 30 to July 6	2	1½	0.06	1	S.W. 2, S.E. 2, N.W. 2, N.E. 3, W. 2, S.E. 2.
July 7 to " 13	1	3	0.59		W. 3, S.W. 3 4, W. 3, S.E. 2, S. W. 2.
" 14 to " 20	2	1½	0.52	2	S. 2, S.E. 2, N. 3, W. 3 6, N.W. 3.
" 21 to " 27	2	8	0.39	1	S.E. 2, W. 4, S.E 2, W.S.W. 3, S.S.W, 3.
" 28 to Aug. 3	3	7½	4.16	1	S.W. 2 3, S. 2 3, W. 4, N.W. 2, N.E. 2.
Aug. 4 to " 10	2	4	1.97	5	N.W. 3, S.E. 2, S.W. 2 3, N.W. 2, S. 2, N.W. 2, S.E. 2.
" 11 to " 17	3	4¼	2.60	6	W. 2, S.E. 2, W. 3, N.E. 2, E. 3, S.E. 2, N.W. 3.
" 18 to " 24	1	½	0.03	1	N.E. 2, S.E. 2, W. 2, S.E. 2.
" 25 to " 31	1	½	0.42	1	N.E. 2 3 2, S.E. 2, S.W. 2, S.E. 2 3.
Sept. 1 to Sept. 7					S.E. 2.
" 8 to " 14	1	2	0.06		S.E. 3 2 3, S.W. 2, N. 3 4.
" 15 to " 21	1	¼	0.07		N.E. 3, E. 2, S. E. 2 3 2.
" 22 to " 28	2	12¼	0.36		S.E. 2, N.W. 3, N. 3, W. 3 4, N.W. 3 4 2.
" 29 to Oct. 5					N.W. 2, S.W. 2, S.E. 2, W. 3, N. 3, E. 2.

(*Vide* tables for 1854, for explanatory remarks.)

[1] For scale of winds, see tables for 1854.

Weekly Mortuary Reports in St. Louis for the months of April, May, June, July, August, and September, 1851.

Week ending Sunday	Weekly aggregate of all ages.	Total of 5 years and under.	Total of cholera.	Total of diarrhœa.	Total of dysentery.	Total of cholera infantum.	Total of periodic fevers.	Total of continued fevers.
April 6	47	15	1	3	...	...	...	5
" 13	51	22	2	1	1	...	...	6
" 20	35	12	3	2	1	...	...	3
" 27	46	17	3	2	1	...	1	4
May 4	51	21	...	2	...	...	3	4
" 11	47	22	1	3	1	1	3	2
" 18	60	22	5	1	3	...	1	3
" 25	62	28	20	5	3	1	1	5
June 1	85	35	24	6	4	9	2	3
" 8	122	47	64	6	1	12	2	2
" 15	220	75	127	15	6	9	3	6
" 22	273	100	153	6	15	14	1	8
" 29	294	114	147	14	9	14	1	...
July 6	219	100	81	14	9	19	8	12
" 13	216	99	79	13	8	21	4	8
" 20	242	104	48	11	21	22	8	9
" 27	160	94	28	8	11	21	6	10
Aug. 3	135	70	14	9	10	13	3	2
" 10	98	58	10	7	9	17	2	3
" 17	112	59	12	14	10	11	9	4
" 24	94	32	7	16	18	5	3	6
" 31	81	31	2	4	15	7	11	9
Sept. 7	75	25	5	5	3	2	9	12
" 14	97	36	2	8	11	2	10	10
" 21	85	38	1	8	7	6	9	2
" 28	82	28	1	5	8	...	7	4
Oct. 5	68	31	...	7	7	...	9	2

Prevalent Diseases in the State beyond the limits of St. Louis.

We have but limited details to present of the counties in the agricultural and mining districts of the State, comparatively few communications having been received, although we addressed a large number of the physicians by circulars soliciting information. An abstract of the information furnished in reply to our circulars will be found in the succeeding pages; but many communications sent to us were of no avail in our office, as they were so meagre as scarcely to afford a single fact or deduction of interest. One fact, however, is prominently set forth in letters that we have received, and is sustained by personal communication which we have had with physicians from every section: it is, that the diseases of the chief commercial city are the diseases of the State; that the epidemics we describe in this and other years as prevailing in St. Louis, whether foreign, local, or endemic in their origin, or contagious, infectious, or meteoratious, are disseminated throughout

the different sections of the entire State.* What we set forth in the preceding and succeeding pages may, therefore, be extended beyond the local limits to which it is specially applied; the inference may be safely deduced that while cholera, diarrhœa, dysentery, typhoid, and climatic fevers, etc. prevailed in St. Louis and other counties on the Mississippi and Missouri Rivers, they likewise extended their range over every county in the State, from the Arkansas to the Iowa line. The matter that we present in the following pages refers to the counties that are the best improved and most populous of the agricultural districts.

Cholera in the Counties on the Missouri River.

In offering our remarks on the diseases which prevailed in parts of the State beyond the limits of St. Louis County, we shall take up the subject of cholera separately from the rest, and follow it in its selected pathway into the interior, thus connecting its history with that we have given of its prevalence during this year in St. Louis. We shall trace it along the two great navigable streams, one of which traverses the southern part of the northern half of the State, from the western boundary to the Mississippi; the other extends along the entire eastern line of the State, separating it from its neighbor, the State of Illinois.

It was principally in the counties on either side of these rivers that the disease prevailed; it is said that by these river channels it was imparted to the interior agricultural districts. We have this certain and prominent fact manifest in its history, and which is true, not only of the year 1851, but of every year it has existed as an epidemic in this section of country, namely, that cholera selects its pathway along the most frequented routes of travel, accompanying emigrant crowds in their progress, and infesting their camps whenever they rested on their toilsome journeys. *Wherever a much frequented route is newly opened, thither will the disease march, and thus gain access to detached communities, which, without this means of communication, might have continued exempt from its ravages.* We have an instance in support of the truth of this in the importation of cholera among the Indian tribes on the upper Missouri, which were, for the first time, visited by the disease in 1849, and to which it was conveyed by the crowd of emigrants in that year who opened

* An exception occurs as to cholera infantum, which seldom prevails in rural districts.

that route to California. These emigrants suffered severely from cholera on their voyage up the Missouri; in their camps at the starting-points of their overland journey in the neighborhood of St. Joseph's, Weston, Council Bluffs, Independence, and Kansas; and for many weeks after they had taken their march into the interior or Indian territory. The aboriginal tribes with which these emigrants were in contact, were infested by the disease, perishing in great numbers by it, and presenting the same symptoms and complications as were noticed in its ravages amongst the whites. It was a disease before unknown to them; their traditions were silent as to any such disorder having prevailed amongst their forefathers or their descendants; and helpless, nerveless, and dying, they dragged their tottering limbs and wasted frames to the white man's camp, seeking in piteous accents for relief. They attributed it to the white man's presence; it was the "pale face" who brought it to the red man's wigwam. Their simple minds could but perceive that it sprang from contagion. Their herbarium contained for it no antidote; their medicine-man was its first helpless victim. In despair they broke up their camps, and thought to escape the pathway of pestilence by flying to the north away from the white man's track. Many perished in their flight; yet terror did not dissipate the Indian's regard for the dead, for the rude rites of sepulture, according to the forms of his tribe, were performed by the survivors over the dead, and often witnessed by the white wayfarer on his route to the Golden Hills of the modern Ophir.

The counties on either bank of the Missouri are the most fertile, populous, and improved of the agricultural portion of the State. Their topography presents the same general features, their surface being elevated, undulating, well-drained prairie, studded with detached sections of woodland, with a portion of bottom land skirting the borders of the numerous streams, which is, for the most part, well timbered. These bottoms are often limited at some little distance from the rivers by bluffs, or, by a moderate grade, the elevation of the adjacent upland is gained. On bluffs which overlook the rivers, there is generally a belt of timber, the naked prairie seldom running immediately to the river's brink. These belts are often several miles wide. Further off from the rivers, prairie land predominates; the timber is distributed in small patches or belts; an ocean of savannas almost as boundless as the horizon is often stretched out in one view, interspersed with limited topical displays

of woodland. In Dr. Drake's work on the *Diseases of the Interior Valley of North America*, the reader will find a description of the river districts of the State. The description given of the Missouri River is of special interest in connection with the diseases of 1851, as the author visited that section of the State in 1844, the year of the great flood. The next and last inundation since occurring took place in 1851.

Cases of cholera occurred in the spring of 1851, on the steamboats ascending the Missouri River from St. Louis, where the disease existed. It also prevailed among the California emigrants encamped before taking up their overland journey at Kansas, Council Bluffs, and their other points of departure, near the western boundary line of the State. The extent to which the disease then prevailed we have no means of knowing; but from what information could be obtained, we are warranted in believing that its prevalence amongst the emigrants was not so great as in the two previous years; and it did not now extend to the permanent population on the upper river. It will be remembered, that the disease commenced in St. Louis in April, when these emigrants were on their way by the city to the Missouri River; the cases which occurred in this itinerant crowd may, therefore, be attributed to exposure in St. Louis. Deaths by it occasionally occurred among the passengers on the Missouri River steamboats during the entire prevalence of the disease in St. Louis, but it was not until July that it created alarm by its inception among the resident population in the counties on its banks. An exception to this remark occurs in the counties of St. Charles and Warren, that are located at the mouth of the Mississippi on the north side of the river, and adjacent to St. Louis County. There the influence of the disease was first manifested early in the spring, reference to which will be found in the communication of Dr. Wright, of Warren, quoted in a subsequent page.

The disease prevailed in several localities in *Gasconade County*, 120 miles above the mouth of the Missouri, some account of which will be found in our extracts from Dr. Napee's communication in a subsequent page. In this, and in Montgomery County, on the opposite, north side of the Missouri, the disease was virulent, but confined chiefly to the inhabitants of the bottom lands. In Fredericksburg and the neighborhood, in Gasconade County, it prevailed to a considerable extent. The number of cases in this vicinity was said to be about twenty—of deaths eight; these occurred in the

early part of August. The disease was succeeded by an unusual amount of bilious and intermittent fever.

The disease broke out suddenly, in the middle of August, in Jefferson City, *Cole County*, on the south side of the Missouri. This place is the legislative capital of the State, and is located in a group of bluffs 137 miles up the river. "There is no interval land in front; but, on the opposite side of the river, there lies a hollow of the usual width, which is liable to partial inundation from ordinary floods. Directly west of the town, a creek, which has passed near it on the south, enters the Missouri. When the river is high, the back water ascends this little stream, and submerges its narrow bottoms. The country beyond this creek, and generally around the city on the south side of the Missouri, is elevated and rugged, the hills being composed of carboniferous limestone. It is subject to autumnal fever, chiefly intermittent, and even to the malignant or congestive variety. It is said to be as prevalent on the city bluffs, at an estimated height of 200 feet, as in the bottom opposite the town; and it is less prevalent on the margin of the bottom than back from the river. The population near the creek, west of the city, both in the valley and on the adjacent hills, are more liable to fever than those further east. The inhabitants three or four miles from the river are more exempt than those who reside on the bluffs." (Drake.) It contains a population numbering about 1500. The mortality from the disease from August 15 to 28, was 19; males 10, females 9. On the 2d of September, the disease had abated, and on the 12th of that month it had disappeared. The 24th, 25th, 26th, 27th, and 28th of August were the most fatal days, during this visit, of the disease, the deaths on them being 14. The disease prevailed in other parts of the country remote from the river.

In Glasgow, *Howard County*, about 220 miles above the mouth, the disease created a panic by an inception in the early part of July. The town was deserted by the inhabitants, who fled to the bluffs. The number of deaths by the disease, up to July 26, was 13; the number that occurred after, we are unable to state. By the end of the first week in August, the disease disappeared, having prevailed three weeks.

In New Franklin, *Howard County*, the disease prevailed towards the end of August and in the first portion of September. This place is situated on the north side of the Missouri, opposite Booneville. "The older village of Franklin, one of the earliest settlements on

the Missouri, has been arrested in its growth and depopulated by Booneville. The sandy and friable bottom on which it stands, or rather on which it stood, is not only liable to overflows, but to extensive caving in of the banks. In consequence of this, a village called New Franklin has arisen on the low bluffs in the rear." (Drake.) The vicinity of Franklin is low and unhealthy, and the most virulent location of the disease was on the lowlands adjacent to the river.

In *Lafayette County*, situated about 300 miles up the river, on its south side, the disease prevailed to a limited extent in the latter part of June, and first of July. In Lexington, an elevated locality, containing a population of 2700, a sudden outbreak of it occurred in the first week in July. The mortality up to July 23, when the visitation was at an end, was 13; white males 4, white females 3, negroes 6. The first cases were of parties who had recently arrived at the town from Kentucky.

In Kansas, *Jackson County*, 433 miles up the Missouri River, on its southern bank, between the mouth of its tributary the Kansas River, deaths by the disease occurred in the last week of July. From Dr. H. F. Hereford of Westport, in this county, we learn that there were about 160 deaths by the disease in Independence, Kansas, Westport, and their vicinity, about that period.

In St. Joseph's, *Buchanan County*, 537 miles up the Missouri, an unusual amount of sickness was reported to prevail in July and August. Within eight days, at the close of July, 13 deaths by cholera were reported. The population of the place is about 2600.

It will be remarked that, on the Missouri, the cholera was, in a great measure, confined to the towns on the river banks. Detached cases were, however, observed in the different sections lying off from the river, and in some instances straggling detachments of the disorder were distributed at the distance of 50 or 100 miles in the interior. In this straggling method of progression, we trace the disease to *Dallas County*, one of the central districts of the southwest section of the State, lying about 200 miles west of the Mississippi, about 160 miles southwest of St. Louis, and 60 miles from Jefferson City on the Missouri. Here it prevailed in Princeton and the neighborhood, during its existence in Jefferson, about the middle of July. It also prevailed, about the same time, "in patches," in the district lying between the Mississippi, the Missouri, and Dallas County, and in different portions of the south-western counties. The number of cases in the river towns was in no instance very

large, falling far below that of 1849, and generally below that of 1850; locations that had escaped it in the previous year were in this year visited by the disease. A remarkable exception to its visitations is evinced in the instance of Booneville. This locality, as we are informed, has never been visited by cholera, although the disease has prevailed in Franklin bottom on the opposite side of the river, and at different points above and below. Booneville is a bluff town on the south side of the river, 187 miles from the mouth. The bluffs, composed of carboniferous limestone, are less rugged and much less elevated than those of Jefferson City, being, according to Nicolet, only seventy-two feet above low water mark, and 602 above the Gulf of Mexico. The country around is dry and rolling, but, on the opposite side of the river, there is a bottom two miles wide. Autumnal fever is less prevalent there than at Jefferson City. The inhabitants near La Mine, the Saline, and other smaller streams which meander among the low hills around Booneville, are more subject to autumnal fever than those in the town and its vicinity. These streams have alluvial bottoms of moderate width, which are partially overflowed by every freshet, or have portions of their surface converted into temporary swamps by copious rains. Many of them, moreover, are rendered stagnant by mill-dams. In a confined locality of this kind, seven or eight miles from the river, Dr. Thomas had seen many malignant and fatal intermittents. In the valley of Petite Saline, which is a mile wide, flat, level, and watered by a stream converted by dams into a series of ponds, I found the fever decidedly and fatally prevalent." (Drake.)

In regard to the season of the year and the limitation as to time in which cholera prevailed on the Missouri River, and in the adjacent countries, it will be observed that it was not localized simultaneously at many points in this section until about the middle of July or later—a date just subsequent to the time when it attained its maximum prevalence in St. Louis, and had begun rapidly to disappear from the city. It prevailed on the upper section of the Missouri at a date previous to its outbreak in the lower sections. At the close of June, it was in Lexington and its neighborhood, in Lafayette County, three hundred and fifty miles up the river; towards the end of the month, it began at Glasgow in Howard County, two hundred and forty miles up; it located itself at Franklin, thirty miles lower down in the same county, towards the termination of August; it prevailed about the same period, namely, at the close of

July and in the first part of August, in St. Joseph's, Buchanan County, 430 miles up, and at the same period in Gasconade County, 100 miles from the mouth. It did not break out at Jefferson City, about 150 miles up the river, until the middle of August. Its period of prevalence in these localities was from two to four weeks.

Leaving the subject of cholera, we now take up other prevalent diseases of the year, in the counties of the Missouri.

Epidemic in St. Charles and Warren Counties.

Dr. Henry C. Wright, of Warren County, writes us that a very malignant form of disease prevailed as a limited epidemic in the spring and summer of this year, in St. Charles and Warren Counties. It partook of the nature of cholera, dysentery, and scorbutus, the symptoms being a mingling of those disorders. Its first inception occurred in the spring, in the vicinity of Flint Hill, St. Charles County. Here it simulated cholera in many of its symptoms, and was so called by some physicians. Its mortality was very great, nearly every case proving fatal. It took up its line of march thence, spreading like the army worm along a certain tract of country, leaving either side uninvaded. It occupied the high dry ridge land lying between the Missouri and Mississippi, crossing the Booneslick road at Pauldingville, and maintaining itself in this elevated district, usually entirely free from miasmatic influences. North of this locality, it extended to Indian Camp Creek, in Warren County, a less elevated district than that previously invaded. Its relative mortality here was less than in other sections. It began its march, as we have stated, in the spring, continuing its progress northward as summer advanced, and persisting, in some parts of the district described, until the cold weather of autumn. In the early part of its reign, it partook of the nature of cholera, there being profuse serous discharges by vomiting and purging, great tendency to collapse, rapid sinking, the patient dying in some instances within six hours, or, if surviving that period, finally succumbing under that condition of imperfect irritative reaction known as choleraic typhoid fever with hemorrhage from the bowels. As the warmer summer months set in, it partook of the nature of choleraic dysentery or malignant dysentery. There was now distinct rigor followed by febrile reaction, the skin being arid and burning, with intense thirst, great præcordial distress, nausea,

vomiting, profuse serous or sero-sanguinolent dejections from the bowels, in some cases muco-sanguine evacuations, and in a few subjects, in the advanced stage of the disorder, some appearance of pus in the intestinal discharges. Hemorrhage, however, from the bowels was always in the ascendant in the last stage. Nervous lesions were early manifested, watchfulness succeeded by coma, muttering delirium, jactitation, subsultus, carphology, etc. etc. The circulation soon became irregular and much depressed, the pulse feeble and frequent, beating from 120 to 150, generally very soft—in a few instances, in the early stage of the disorder, tense and firm; the extremities cold, the abdomen and head hot; the tongue, early in the disease, was coated with a thin white fur in its centre; its edges were red, its tip pointed and upturned. In a day or two, the coating became thickened, pasty, and of a dark yellow or brown color, then peeling off, and presenting the organ dry, glazed, intensely red, and fissured, with the papillæ tumid. The mucous coat of the mouth, fauces, and pharynx offered the same changes as that of the tongue. Fuliginous sordes now accumulated, and oozing of blood from the gums and pharynx set in. In many cases, a scorbutic appearance of the parts within the mouth and throat was presented, the gums becoming distended, spongy, and separated from the teeth, with dusky redness of the fauces and pharynx, and profuse hemorrhage from these tissues. The surface became spotted with ecchymoses. The hemorrhagic tendency involved the tissues of the stomach and bowels, either hæmatemesis or melæna, or both, occurring with the hemorrhage from the mouth and throat. The hemorrhage was often very profuse and rapidly exhausting; in those cases where scorbutic symptoms were prominent, collapse rapidly supervened, the patient sinking with profound coma within a few hours. During the febrile stage, in the more protracted cases, distinct morning remissions and evening exacerbations were more or less noticeable. The abdomen was intolerant of pressure, but not more so in one than another of its regions; tormina and tenesmus were not so distressing as in inflammatory dysentery; dysuria was often present. The mortality by the disease was very great; every case in which nervous lesion became marked proved fatal, and these were a large proportion of all attacked. We regret we have nothing to offer of an accurate or satisfactory character relative to the statistics, causes, or nature of the disease.

Diseases of Gasconade County.

By Dr. Napee, of Hermann, we were favored with several communications, from which we condense the following:—

"Our observation of the diseases of this section of Missouri has often reminded us of the correctness of the axiom that an epidemic *æris constitutio* will, where it exists, affect materially the amount and the symptomatic manifestations of various diseases, most frequently impressing them with a malignancy uncommon to their ordinary display, and rendering them, for the time being, more intractable and fatal. The year 1851 offers an instance of the truth of these remarks; its diseases were parallel to those of the year 1844, with the exception only of the occurrence of cholera in 1851. The two years are likewise similar in their meteorologic features, being marked by an unusual prevalence of heavy rains in the spring, and an excessive freshet in the Missouri and its tributaries, that drain the state. When this inundation subsided, cholera, dysentery, and climatic fevers appeared. Cholera prevailed in our country in a fatal form, frequently terminating in from five to eight hours. This was the case on Loutre Island, which had been submerged during the rise of the rivers, and in the valleys of Loutre Creek and the Gasconade; while on the higher lands, as, for example, in Hermann, it prevailed to but a limited extent. In those cases that were not fatal in the early stage, the disease ran into a fatal form of typhoid fever, and, in the more favorable cases, into intermittent fever. This tendency to intercurrence with periodic fever was strikingly marked in all of our diseases, and, in the instance of cholera, presented a manageable form of that disease, in which a diurnal tendency to reaction, followed by a morning remission, was apparent, that was amenable to the curative influence of quinine and iron.

"On the discontinuance of the wet season, and after the prevalence of a brief period of dry and hot weather, the cholera suddenly disappeared, its place being taken by dysentery, intermittent and remittent fevers, mostly of a malignant and fatal character. It was also observed that other diseases, not usually common at this period of the year, appeared in greater amount than usual; children at the age of dentition were liable to convulsions, and the female in gestation was more frequently exposed to abortion and to puerperal fever after labor. The greatest mortality after that by cholera was in the months of September and October. In this

we realize the truth of the observation that a wet spring or wet fore-summer is usually productive of disease and mortality in the autumn.

"Stomatitis prevailed in an unusual degree this year, as was the case in 1844. In most cases, it was accompanied by considerable swelling of the submaxillary and parotid glands; in some, by an erysipelatous affection of the face and neck. In a few instances, metastasis of inflammation to the testes occurred; in a small number, suppurative parotitis took place. This form of disease seemed contagious; when a member of a family was attacked, all who remained in contact with the first case were visited by the disease.

"It was singular to observe the tendency of acute disorders to run into cholera; nearly all of these were associated in their early stage with nausea, vomiting, profuse diarrhœa, vertigo, cold extremities, feeble pulse, &c., and in some cases with cramps.

"Acute cutaneous affections prevailed to a considerable extent in the summer, such as lichen, herpes, furuncle; influenza (catarrhus epidemicus) of a catarrho-rheumatic form predominated in March and April, presenting the usual symptoms. The disorder was slow in its progress, and generally pervaded the entire of a family. It visited all ages, being of a mild form in the young and middle-aged, but dangerous to the old and to those with a tendency to pectoral disease, as also to the inebriate. After the extreme heat and dryness, a mild form of catarrhal ophthalmia was observed prevailing, in some instances in all the members of a family, but readily yielding to moderate treatment. Blisters to the nape of the neck were demanded in a few instances, and the ointment of white precipitate of mercury was employed with success. Otitis, sometimes suppurative, and difficult audition were noticed in connection with the disorder.

"Intermittent fever is endemial in this as in all other sections of the State, but, in this year, it was unusually prevalent, obstinate, and much disposed to relapse. It was frequently complicated with inflammatory and nervous affections, the spleen and liver exhibited enlargement, and, in some subjects, pneumonia occurred requiring venesection. In the early period of the invasion of this form of fever, the quotidian and tertian types predominated; as the autumn advanced, these types gave way to the quartan, often of a malignant form. A remarkable difference was observed in the vernal and autumnal cases of this disease; the former were of an accelerated type, mostly the quotidian or tertian; the latter were of

the retarded type, mostly quartan. Jaundice with, as stated, hypertrophy of the liver and spleen, were the most common sequels of the disease."

From Dr. J. M. Burgess of Delphi, Gasconade County, we received communications. His statements concur with those of Dr. Napee.

Diseases of Boone County.

We take the following from the *Transactions of the Medical Association of the State of Missouri*, Vol. II. 1852: "A report on the topography of the County of Boone, with some of the symptoms and treatment of dysentery and erysipelas, as they have prevailed in the Missouri River bottom, both in their endemic and epidemic forms. By J. Wilcox, M. D.

"The county is situated near the central part of the State, having the whole length of its southern boundary (about 40 miles) bordering on the Missouri River, with three convenient stopping-points, each being easily accessible, and from which a large amount of produce is annually shipped.

"That portion of the county bordering on the river is alternately high and low, presenting bold bluffs, composed of limestone, and canopied with the quercus alba, or white oak, cornus florida, or dogwood, juniperus Virginiana, or red cedar, and red bud. The soil here is exceedingly productive, but, in consequence of the unevenness of the land, and its tendency to wash, is not cultivated until you recede some distance back from the river. The low lands, or river bottoms, vary in width, from a few hundred yards to some miles. The soil is rich and productive. Here may be found forest trees of more than a hundred feet in height, by some six or eight in diameter. Their large branches are extended outwardly, so as to form an umbrella, by which the surface is almost totally concealed from the rays of the sun. The vegetation is very luxuriant. Growing upon the edges of the marshes, and diffused over the low land, may be found the rumex aquaticus, or water-dock; eryngium aquaticum, or button snakeroot, or water erynge; ranunculus sceleratus, or crowsfoot; podophyllum, or may-apple; phytolacca, or polk; sambucus canadensis, or elder; solanum dulcamara, or bitter-sweet—forming a covering for the soil and portions of the marshes, by which means they retain their moisture, until, from a protracted drought, during the months of August and September, the vegetation commences decaying; the partly dried

marshes, with stagnant water and decaying vegetation, become fully exposed to the rays of the sun, by which means the autumnal miasmatic fevers are produced.

"These lands are liable to an annual inundation, in consequence of the lowness of the river banks.

"In the southwestern part of the county, only a few hundred yards back from the bottom, is a particular locality, famous from the fact of its inhabitants having been attacked with milk-sickness. Here the land is rolling or very hilly, containing many sink-holes, partly filled with water, and previously, several small ponds; but since the draining of the ponds, and destruction of much rank vegetation, by cultivation, the disease has entirely disappeared. The country extends some twenty-eight miles back from the river; the face of the country is generally rolling, and traversed by some ten or twelve small creeks, which find outlets in the Missouri River; a majority of them contain running water during the entire year.

"No minerals are found within the county, but their absence is fully compensated for by beautiful fields of corn, wheat, and tobacco, to the growth of which the soil is peculiarly adapted. In an educational point of view, the county is second to none in the State.

"The University of Missouri, and also the two female institutes, are located in Columbia, the seat of justice for the county. In the river bottoms, the attention of the traveller is often attracted by dilapidated log-cabins, of one story in height, without either door or window, the entrance to the one being closed by a sheet or blanket, and the opening for the other having never existed, but its place supplied by the numerous crevices between the logs, which are permitted to remain open during the most inclement weather. The foundations of these cabins consist of nothing more than the bottom logs, lying upon the ground, and which are frequently imbedded in the earth; the floors are roughly split slabs, laid upon the ground, or else elevated above it but a few inches. Here it was that epidemics made their appearance, in their most malignant and fatal character, sweeping off large numbers of the community, attacking alike old and young, male and female. Endemic diseases, also, in many instances, assumed a different form or appearance, and required a modified course of treatment to that ordinarily adopted on the hills. In addition to these causes of disease, which should constantly obtain the attention of the physician, another is worthy of consideration. I allude to the dietetic habits of the

people. They generally eat as for a wager against time, swallowing their food mashed, not masticated, and, of course, scantily supplied with saliva. Instead of applying this useful adjuvant in digestion to its proper and natural use, it is spit up with tobacco juice, and the food in the stomach must find its way to that viscus, floating in hot coffee. Add to this, the uniformity of dress worn by the people, (seldom changing for a change of temperature,) and the vicissitudes of the climate, and we have what might be thought sufficient causes for engendering and developing diseases of every type and grade, and such, indeed, is the case.

"Having mentioned a majority of the predisposing and exciting causes of disease, I shall notice two of the more prevalent and formidable affections which I have had an opportunity of observing.

"Dysentery has prevailed here, both as an epidemic and an endemic disease. As an endemic disease, it has presented nothing unusual, in point of symptoms or treatment, from that laid down by the best authorities of the day, unless it be its very frequent complication with intermittent and remittent fevers, and a want of tolerance in the system to bear up under the same depletory measures which would be found necessary in the high lands. In its epidemic form, it has proved (as in other portions of the western country) a formidable affection. In its mode of accession, it has differed from the common endemic disease: the premonitory symptoms being of longer duration; muscular debility more strongly marked; and the discharge differing, consisting first of liquid and mucus—then becoming consistent, again changing to liquid and mucus. They were at first of a deadly ash color, containing some mucus, and extremely offensive, having a considerable quantity of carbonic acid and sulphuretted hydrogen gases. Later in the attack, they resemble bloody water, or the washings of meat. The circulation also participates in the same prostrating influence; at first the pulse is full, but easily compressible; in a short time, it becomes extremely frequent and feeble. The skin, in some cases, is marked with vibices, and cold, clammy perspiration. The countenance wears an anxious expression; and, later, subsultus tendinum and delirium often set in. Not having had an opportunity of witnessing any *post-mortem* examinations, I am unable to state the anatomical changes that have occurred. The causes that produced these varieties seem to differ equally.

"Endemic cases could be explained by the individual having been subjected to exposure, such as wet feet, a sudden check to the

cutaneous exhalation, or, more commonly still, to errors in diet. But, in the epidemic variety, no such distinct causes were necessary, although errors in diet seemed to increase the tendency to the attack. In the treatment of this variety, I have found mercury and blood-letting, both general and local, of but little benefit, and, in many instances, prejudicial; but, in the earliest stage, before a complete establishment of the inflammation, with profuse mucous discharges, I have used creasote, and also oil of turpentine, with advantage. After the disease had become established in the system, I have found opium an invaluable remedy. Besides relieving the sufferings of the patient, and procuring sleep, which is much disturbed in this affection, it did good by diminishing the morbid sensibility of the bowels to the irritating matters they contained, and, by relieving spasmodic constriction, facilitated the action of purgatives. Ipecacuanha, used in combination with opium, I have found to be a useful adjuvant. A dose of ol. ricini, directed as a mild purgative (having found saline purgatives of but little benefit, and, in some cases, prejudicial); afterwards the use of strychnine, subnitrate of bismuth and opium, and also powdered charcoal, to relieve the fetor of the evacuations, with anodyne injections (of starch, laudanum, and acetate of lead) to relieve the distressing tenesmus which often tormented the patients; fomentations, cataplasms, and blisters to the abdomen, and, when necessary, the strength of the patient to be supported by stimulants and nutritive drinks, such as quinine, brandy, wine, carbonate of ammonia, and animal jellies, has been the treatment pursued by me with the most satisfactory results.

"Erysipelas has also prevailed, both as an endemic and an epidemic. In its endemic form the symptoms were mild, but well marked. The disease rapidly yielded to the use of bleeding, (when necessary,) mercurial cathartics, tartrate of antimony and potassa, and saline cathartics, with local applications of a mucilaginous character. As an epidemic, it prevailed here in the year 1847, in its most malignant form, attacking persons without regard to age or sex, locating itself upon the brain and spinal cord; it frequently ran its course in a few hours, but in a majority of cases lasted from one to five days, proving fatal in almost every instance, with scarcely a single exception. It made its appearance again in the spring of 1851, attacking most frequently the throat; but few cases of a malignant character occurred. Then, again, it made its appearance in 1852, but attacked a much smaller number of persons than for-

merly, and with but few cases presenting any symptoms of malignancy, although malignant erysipelas was prevailing across the river, not more than two miles south of this locality, and also twelve miles northwest of it, in Howard County. I have not been able to ascertain the course of treatment pursued here in 1847. During the spring of 1851, I found a varied course of treatment was required for different cases; in some, bleeding, antimonials, saline cathartics, and mercurials produced the desired effect; whilst, in others, hydrargyri pilula and pulv. rhei as a cathartic, Dover's powders as a diaphoretic, and quinine and brandy to support the system, were required. Since its appearance in 1852, I have used a treatment described by G. Hamilton Bell, of Edinburgh, who says that 'he has employed it for a quarter of a century, without failing in a single instance. In no instance, by its employment, has suppuration taken place, and the patient,' he states, 'is generally left in a more robust state of health than he was previously.'

"His mode of administering the remedy. 'Of course, the first object is to have the bowels freely acted upon; if the attack be mild, fifteen drops of the muriated tincture of iron are administered in water every two hours until the disease is completely removed. When the attack threatens to be more serious, the dose of the tincture is increased to twenty-five drops every two hours, and persevered in night and day, however high the fever and delirium.' In cases presenting both a sthenic and asthenic condition of the system, I have used it, adding, when there is much prostration, quinine and brandy. As a cathartic, I prefer blue pill and pulv. rhei, and as a local application, when it attacks the throat, a saturated solution of nitrate of silver. The results have been most gratifying."

Diseases of Chariton County.

From Dr. John H. Blue, of Brunswick, we received a communication on the topography and diseases of the part of the State known as the Grand River district, which, lying on the north side of the Missouri River, extends back towards the Iowa line, with the Chariton on the east, and Grand River on the west; it embraces a section of country some fifty miles square, north of 39° N. lat., and west of 93° long. W. of Greenwich. This is an extent of rich lands traversed by numerous slow tortuous streams, with level, alluvial intervals or bottoms on either side, and rich prairie or upland forming the greater and higher portion of the district. The

upland is undulating, without elevations rising to the dignity of hills. The woodland is distributed in belts skirting the water-courses. Limestone and sandstone frequently outcrop, and veins of bituminous coal occur. The low lands on the water-courses are liable to inundation in many seasons, and the entire region around abounds with shallow ponds of stagnant water. We may correctly infer from its topography that the prevalent diseases of the country are intermittent and remittent fevers and their sequelæ. In years when the earlier part of the season is comparatively dry, we often escape with little sickness. Rains prevail in May and June to an increased amount over other months of the year. The spring of 1851 was a season of unusual rain, the streams were very high, and the bottom lands were inundated, and, as a consequence, an unusual amount of endemial fever prevailed. The same was observed after the heavy rains and great freshet in 1844. We do not pretend to decide what is malaria, if such an agent exist; but we are satisfied that, in this section of country, the effects usually attributed to that cause are much aggravated by the imprudence of the new settler and the privations to which he is exposed. The emigrants crowd into ill-ventilated log-cabins, drink stagnant water, subsist on fat bacon and corn bread, without the due admixture of succulent vegetables or fruits, and expose themselves to the dews and miasmata with inadequate and unsuitable clothing, and are often under the necessity of laboring while under the operation of disease. The system, self-renovating as it may be to some extent, will bear up against miasmatic influence when it has the advantage of pure water, wholesome food, and prudent exposure to labor, and this result is observed when the settler completes his improvements, and has the opportunity of gathering round him the comforts and conveniences of a more advanced state of rural life; but as a stage of settlement in which many privations must be endured exists for every immigrant after his arrival in the new country, we need not be surprised at his greater liability to disease during the earlier period of his settlement than in the more advanced period.

The winter in the Grand River country is usually an open season; the snows are seldom deep, and lie but a short time. Rain, winds, and sleet make up the cold seasons. Inflammatory affections of the respiratory organs and synochus often prevail during the winter. This fever, however, presents the remittent type, and is treated often, perhaps too often, with quinine. Of late years, cerebro-me-

ningitis has frequently prevailed, and is a formidable and fatal affection.

During the year 1851, cholera did not prevail in the Grand River district, although it was fatal at many points above and below on the Missouri River. Bilious diarrhœa and dysentery pervaded some malarious neighborhoods. Dr. B. offers but few remarks on the treatment of the diseases of the country. The physicians, he observes, are generally well informed, and their views of practice correspond with those of accepted authorities. Charlatanism meets with little favor from the resident population, who are content to live or die scientifically. He states that a marked change has been noticed in the type of diseases of late years. It is not so active as was formerly observed, active treatment is less resorted to, a marked intolerance of depletive measures being now extant. Drastic cathartics are abjured; the predominating influence of irritability of the stomach and bowels forbidding their employment. The use of quinine and morphine is extending in both medical and domestic practice.

Diseases of Jackson County.

Dr. H. Ready, of Westport, Jackson County, sends us the following account of an epidemic visitation of erysipelas that prevailed in the winter of 1851–2 in his neighborhood. His communication details the cases which occurred up to the 19th of February, 1852.

The disease under consideration is known as epidemic erysipelatous fever, or by the common title "black tongue." My knowledge of its present visitation is not derived from personal observation of the cases, but from information given by Dr. Thomas Lea, who kindly furnished the major part of the facts herewith communicated. Dr. Lea is a resident of the immediate vicinity where the disease first appeared, and observed its progress from the commencement up to the present time.

The first case occurred in a young man who had just returned from California. We shall not attempt to give a detailed history of each case, but in as brief a manner as possible present an outline of the general symptoms of all the cases, their treatment, etc. There was no great similitude in the first that were presented; the first prominent and appreciable symptomatic lesion in some was an acute pain in the angle of the jaw, in others in the side of the neck; again, in others, the pain was located upon the mastoid pro-

cess of the temporal bone, or in the point of the shoulder. In some cases, this symptom was preceded by rigor; in others, it was followed by decided chill, and was succeeded by fever of greater or less intensity according to the gravity of the attack. There was malaise, pain in the head and neck extending down the back to the extremities, the eyes assumed a peculiar full, bright, and glistening appearance, the mouth and fauces were dry and of a dusky red color, the tongue became dry, red along the edges, and covered in the centre with a grayish coating. In the progress of the disease, the tongue became swollen, its margin livid, its central portion black; hence the common name of the disease.

Treatment.—In the first cases, the treatment adopted was palliative; but as the malady became better appreciated, a more active course was entertained. Bloodletting was now resorted to in almost every case wherein it was thought it could by any possibility be tolerated; in fact, Dr. Lea was disposed to run counter to most authorities on this point, and assert that the remedy would be beneficial even in cases where the pulse and state of the general symptoms might appear, at the time, to contra-indicate its employment. In this I differ from Dr. Lea, being disposed to be very careful how I trusted the lancet in any case, for fear of aggravating the disease and superinducing typhoid symptoms. In bleeding, I would be governed by the following circumstances. If called in early to a case, immediately after the symptoms indicating its first stage, and I find the subject to be robust and well nourished, and the fever high, I adopt the plan of Marshall Hall, placing the patient in the upright position, and bleeding, being careful to suspend the depletion on the first appearance of exhaustion. I am well aware of the great diversity of opinion existing among physicians as to the use of this remedy in the disease, some advocating it as beneficial, while others condemn it because of the irreparable injuries traceable to it in cases where it has been resorted to after the formation of phlegmonoid deposits, and the appearance of typhoid symptoms. Nevertheless, some have succeeded in the early stage of the disorder, in lessening the severity of the disease by it, subduing the fever, checking inflammatory action, and protecting the vital organs from the localization of the disease upon them. I am incredulous of its accomplishing so much in every case, and, as I have remarked, would be careful in resorting to it.

In the cases occurring in this county, the treatment first resorted to consisted of ipecacuanha combined with small proportions of

hydrargyrum cum cretâ, sufficient of the former being given to maintain nausea. Tartarized antimony was tried, but found to be less available than the ipecacuanha, owing to its tendency to induce gastro-enteritis, and, in some cases, extreme prostration. Diaphoretic infusions were likewise exhibited. Dr. Lea usually directed the addition of Dover's powder to the mild mercurial at bed time, to allay nervous excitability. These remedies, in the majority of cases, effected the best results. After the febrile symptoms were reduced, a stage supervened in which tonics were indicated. Dr. Lea used quinine freely, and with success. It seemed well adapted to sustain the vital powers and repair the lesions of organic life. Wherever there was much prostration, and a tendency to collapse, ammonia, camphor, opium, cinchona, wine and turpentine enemata, etc., were used. Blisters were productive of more injury than benefit. The bowels were kept soluble by saline laxatives and enemata. Gargles of solution of nitrate of silver, gr. iv. vel. v. of the salt to the ounce of distilled water were much used. As a topical application, Dr. Lea relied much on ferruginous poultices, the sulphate of iron being added to the ordinary cataplasms. He derived the greatest advantage from them. I placed more confidence in the application of the nitrate of silver, as more promptly arresting the local inflammation, than any other topical remedy. In the suppurative stage, or when the parts within the mouth and fauces ran into ulceration, the best application was the solid nitrate of silver, or a strong solution of the salt.

Number of cases treated to date,	20
" " deaths "	3
" " recoveries "	14
" " under treatment "	3

Diseases of Buchanan County.

Reported by Dr. A. Kerns, of Bayer's settlement.

This county is an elevated district of prairie, sufficiently undulating to drain the surface of rain as it falls into the small branches that flow into larger creeks which traverse it in every section. The larger watercourses have deep beds, slow currents, and high banks, with more or less bottom or meadow land on either side. These bottoms are liable to overflow during the high stage of water in the Missouri, and are limited by bluffs at variable distances from the streams. The drainage of the bottoms and of the higher prairie

land on the bluffs, is slowly effected, the dip of surface from the ridges to the water level of the streams declining at a gradual rate. The major part of the bottoms is, therefore, humid, and in some instances shallows of stagnant water form on them in rainy seasons. A portion of their surface is covered with timber, affording annually a rich *débris* of mast and foliage. The remaining part of their surface yields fertile crops when cultivated, especially of grass, which covers the earth from year to year, unless it is burned off in the autumn. The elevated prairie land is finely interspersed with forest growth, whose luxuriant foliage in the warm months affords a dense shade, beneath which is a thick undergrowth of stunted vegetation. This prairie is likewise very fertile. The hollows of the base of the undulations are moist. The general face of the country has been much improved within a few years, by its rapid settlement, and the drainage of the hollows referred to has been better effected as population and culture of the land increase. The so-called malarious diseases prevail to a greater or less extent over this entire district, the principal locations being the hollows or the bottoms which hem the watercourses. Their diminution is apparent with the progress of improvement, drainage, and tillage of the land. From Dr. Kern's observation, during a residence of ten years in the county, it is remarked that a wet season is necessary for the development of malarious diseases. The dry seasons are healthy.

Catarrhal ophthalmia began to prevail extensively in this district in May, and continued to a greater or less degree for the remaining portion of the year. The sanitary condition of the population had been good during the previous winter, and so continued, with the exception of this disease, until August, when miasmatic diseases set in, the ophthalmia now subsiding to some extent, but again increasing as the winter approaches. Ophthalmia had never prevailed so extensively in the district as in this year. The temperature of the month of April was lower than usual, and the weather was very variable, the month opening with extremely cold weather and the prevalence of snow and high north winds. To this unusual climatic state ophthalmia was attributed. Warmer and drier weather prevailed in May, until about the 10th day, when the rainy season set in and continued in an unusual degree until the middle of July. So completely was everything deluged, that farming operations, travel, and almost every other occupation, had to be suspended. In the short intervals between the rains, the sun shone with an un-

usual heat and brilliancy; evaporation was rapid, and the atmosphere was surcharged with humidity. The prevalent winds during this period were from the south and west, and, careering over the uninterrupted surface of prairie, often acquired great violence in their course. Fortunately, the decline of the rains was gradual, else a sudden cessation, with the great solar heat that prevailed as summer advanced, would have created an excessive amount of disease. The cause of the epidemic ophthalmia was supposed to be excessive atmospheric humidity, the prevalence of high winds, with the vivid sunlight and great solar heat. These, combined in an unusual degree, exerted, doubtless, a great influence on its origin, progress, and duration.

The general symptoms of the disease were, in a marked degree, different from those of ordinary catarrhal ophthalmia. It usually began with sense of itching or painful irritation, as of sand in the eye; profuse lachrymation then set in, with intense conjunctival injection, great heat and throbbing within the orbit, photophobia, and chemosis. The globe and lids of the eye would become extremely distended, their motions painful, and profuse muco-purulent secretion would set in. In some cases, the sclerotica became involved, attended with severe circumorbital pain, fever, &c. The constitutional irritation was comparatively slight, unless sclerotitis was superadded. The disease, after lasting from ten to fifteen days, and in some cases to a later period, turned into a suppurative form, the conjunctiva becoming thickened and granulated, and free secretion of a muco-purulent character being established. In this degree, the disorder persisted for a considerable time, subsiding very slowly, and leaving the affected tissues liable to the return of inflammation on exposure to slight causes of the disease. In many cases, great impairment of vision resulted, which was, however, much under the control of judicious treatment. In none was there blindness or permanent opacity of the transparent tissue of the eye.

Treatment.—In the majority of cases, the constitutional disturbance was so slight as to render it apparently a practical fallacy to order active constitutional measures for the relief of the local symptoms. Cooling, soothing, topical applications, with the free employment of cathartics, the saline being preferred, with scarification of the conjunctiva, acted admirably. The nitrate of silver in solution was efficient in some cases, in others it was of no avail. In cases where the constitutional disturbance seemed to demand it, active general treatment was resorted to. General and local bleed-

ing, purgation, antimony, &c., and the same local applications that were used in the milder cases, were used with variable results. What were the best local remedies would be difficult to decide, such as appeared to be efficient in some cases would be ineffectual in others; where, in one case, cooling and astringent collyria would seem to operate well, in another they would afford no relief. Tepid and emollient applications would be of service in some cases, and valueless in others. No uniform system was applicable to all cases; the remedies had to be varied, and it was no slight difficulty to determine on the best course.

Age, sex, or color produced no observable modification in the symptoms of the disease; all seemed to share it alike; occupation scarcely influenced it; it occurred among whites and blacks.

The most generally distributed epidemic of the year, was endemic intermittent fever. This endemic resulted from the extraordinary wet spring and summer, succeeded by hot and dry weather. Sporadic cases of this disease were observed in August, but its general distribution was not noticed until September, and it subsided in October. Though very general in its attacks, it was mild in its form, and easily managed. The only malignant cases that occurred were late in the autumn. As winter set in, many of the protracted cases assumed a new form, running into a fatal typhoid fever.

Diseases of Andrew County.

Andrew County is adjoining to Buchanan, both being situated on the east side of the Missouri River, the former furthest to the north. They form a portion of the district known as the Platte Purchase, a section added to the State, subsequently to its admission into the Union, lying between the old western boundary line and the Missouri, that on reaching the western boundary makes a detour from an east and west course, and runs from the northwest in a southwest direction. The counties of Atchison, Nodaway, Holt, Andrew, Buchanan, and Platte, were formed out of the Platte addition, being arranged from north to south along the east bank of the Missouri in the order in which we have placed them, Atchison, and Nodaway which joins Atchison on the east, being the most northerly, having the Iowa state line for their north boundary, and Platte being the one furthest south.

The prevailing diseases of Andrew County form the subject of a

communication from Dr. Wm. Burnett of Savannah, the county seat from which we make the following extracts.

The part of the county in which Dr. B. has practised for nine years, may, from its topography, be regarded as a healthy locality. The face of the country is undulating, the hollows are of limited extent, and, as a general remark, the surface is well drained. The water is good, indeed there appear but few causes, local or general, in this part of the State, favorable to the generation of much disease. The prevalent diseases are intermittent and remittent fevers, and an occasional visitation of influenza, dysentery, or variola has occurred.

Intermittent and remittent fevers are so intimately associated in their prevalence, and are so often intercurrent, that their differential diagnosis is not always a matter easy of solution. We shall speak of them collectively, for they scarcely require any distinction; their mode of invasion, their progress, their terminations, treatment, sequelæ, and causation being so very closely united. These fevers have prevailed most extensively in this portion of Missouri during the latter part of the summer, and in the autumn of 1843–4–5 and 6, and 1851, and although they are endemic to this section of country, and cases are seen at all seasons, yet at the periods named their epidemic influence was extensively felt. Their causation is referred to "Malaria," though, from our description of this portion of the State, the influence of miasmata would not be expected to operate to any great extent; yet we have observed that, in the latter part of the summer, and during the fall succeeding every wet spring, we have an unusual prevalence of intermittent and remittent fevers, even in localities remote from those in which marsh miasmata might be supposed to abound. Indeed, we regard no locality as being exempt, these diseases being common and fatal in the higher, and, to all appearances, the healthier portions of the country. We will here remark that our soil is rich, and the bottoms and uplands are covered with luxuriant vegetable growth, the decomposition of which, under the influence of the solar heat, must play an important part in engendering miasmata. The maximum temperature of summers during which these fevers prevail, is usually from 90° to 100° Fahrenheit.

We shall say nothing relative to the symptoms of these fevers, further than to allude to their diurnal types. Sometimes they are marked by regular paroxysms, assuming, in the same subject, at different times, the quotidian, tertian and quartan types; some-

times, and frequently, the double tertian prevails; at other times, we will observe the fever is ushered in without rigor, the paroxysm continuing from six to forty hours, then remitting, or partially intermitting, again returning, the paroxysm still irregular in some of its symptomatic details, until the disorder terminates, which may not be for a month or for a longer time.

Treatment.—The principial remedial agent in the treatment of those fevers is quinine, given in the interval of the paroxysms, or during their remission. When the paroxysms are intercurrent, the salt is given in large doses during the febrile stage. The mortality by these fevers is very small, scarcely one subject in five hundred that are attacked.

Catarrh, assuming an epidemic form, is not uncommon during our vernal season. It prevailed extensively in 1850, generally in a mild form. Occasionally it proved severe and obstinate, terminating in pneumonia. We ascribe it to sudden atmospheric changes and redundance of humidity.

Speaking of dysentery, as it prevailed in the summer and autumn of 1850 throughout Andrew County, particularly in Savannah, the county seat, and in the adjoining counties, Dr. B. refers to its treatment with quinine. "The remedies chiefly relied on," he remarks, "were calomel with opium, anodyne injections to relieve tenesmus, and quinine. I was induced by a friend, Dr. T. L. Young, to commence the quinine treatment earlier in the disease than my own judgment taught, and contrary to expectation, and, as I thought, also to reason, had cause to be pleased with its effects. Dr. Young, after giving one or two alterative doses of calomel, commenced with quinine and morphine as his principal remedies, and was very successful. Indeed, I know of but two deaths having occurred from the disease in the county."

Diseases of De Kalb County.

This county is in the northwestern part of the State, having Andrew and Buchanan counties on the west, between it and the Missouri River, and Clinton and Clay counties on the south, also between it and the Missouri. To understand this southern and western range of the Missouri with respect to De Kalb County, we may explain that this river first touches the corner of the State at the northern and western boundary lines, in latitude 40° 37′ north, longitude 95° 56′ west of Greenwich. It pursues a south-

western course, forming the western State boundary, until it reaches latitude 39 north, longitude 94° 40′ west, where it takes an easterly course, at first a little inclined to north, and traverses the southern portion of the northern half of the State until it enters the Mississippi, in latitude 38° 50′ 50″ north, and longitude 90° 13′ 45″ west. The western limit of De Kalb County is, at its southern point, about fifteen miles from the Missouri, and about thirty-three miles from it at the northern extremity. The southern limit of the county ranges about 30 to 40 miles from the curves of the Missouri.

Nine-tenths of the surface of this section of country is prairie land, the rest is moderately broken. The streams are usually small, and have extensive patches of bottom land contiguous to them. From Dr. John G. Miller, of Maysville, the county seat of De Kalb, we learn that *rubeola*, of a severe grade, commenced in the county in April, 1851, continuing during the spring and summer months, and closing with the commencement of autumn. The catarrhal symptoms were more than ordinarily severe, and stomatitis was a frequent complication. Diarrhœa invariably attended the declining stage, proving protracted and obstinate. The period of prodromus was well observed, and invariably limited to twelve days from the time of exposure. Dr. M. observed two cases in which the disease recurred in subjects who had been previously attacked.

Mucous diarrhœa was unusually prevalent in August. It yielded readily to mild mercurials, with opiates and astringents.

Periodic fevers generally prevail in this section from July to November. They are generally manageable, are regular in form, and controllable with the ordinary remedies.

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We are unable to offer any details regarding the diseases prevalent in the counties on the Mississippi during this year, beyond what is contained in communications of Dr. L. Banks, of Marion County, extracts from which will be found on a succeeding page. From the newspapers of the day, we learn that the cholera prevailed in this section in the same manner, and almost at the same time that it existed on the Missouri, breaking out suddenly in some localities, prevailing for a brief period to a limited extent, and distributing itself in patches in the counties remote from the river. Its complications were in these districts the same as on the Missouri; its mortality was in almost the same ratio, and the summer and autumnal endemics were much increased in amount and fatality, by the same causes that operated on the Missouri. In short, the his-

tory of disease, presented in the foregoing pages, is descriptive of disease throughout the State. Our previous statements, in all details, apply to localities not described, as well as to those to which they have special reference, and which have been described. The medical topography of the entire district north of the Missouri varies but little from that of the counties composing the portions of it we have described; the local and general, the endemic and epidemic causes distributed over it, vary but little in the entire section, in comparing one part of it with another. The character of its diseases may, therefore, be left to inferences based on what we have already stated.

The southeastern section of Missouri is, for the most part, liable to the same diseases as the Missouri River of middle section. In the extreme southern counties, lying on or near the Mississippi, New Madrid, Pennscott, Dunklin, Butler and Stoddard Counties, a topography prevails very different from that in other parts of the State. This is the extensive swamp district between the Mississippi and St. Francois Rivers, situated at the head of the great St. Francois bottom, which is graphically described in Dr. Drake's work on the diseases of the interior valley of North America. The principal town in this "swamp district" is New Madrid, and, in speaking of it, Dr. Drake remarks that it has claims on the consideration of the medical etiologist, as standing in the focus of the only series of earthquakes which have agitated the interior valley of North America since its discovery. Beginning on the 16th of December, 1811, they continued for the next three years, during which time but few days passed in succession without repeated vibrations at this place and its neighborhood. "These vibrations produced in the town and the surrounding region some remarkable topographical and hydrographical changes; which, with the inquiry into the influence of the whole series of earthquakes, on the health of the people, may perhaps constitute the subject of a distinct section." We regret that we have received no communication from any physician in this interesting section of country, upon a topography so very rare and so very crusty and tremulous. The entire district is supposed by many to be a thin crust of earth, the foundation of which is an interlacement of trunks and boughs of trees, on which is superimposed an alluvial deposit of soil; this uncertain structure, it is further believed, rests or floats as it were, over a huge subterranean lake, the emanations from which are said at times closely to resemble in odor that of burning sulphur.

From the character of its formation, the district might be plausibly inferred to be intimately connected with that rare disease, popularly known as "the trembles;" it is certainly very liable to another more common form of diseased action, popularly known under the name of ague, or "shakes."

Diseases of Marion County.

From report of Dr. L. S. Banks of Houston. This county is in the northeast section of the State, on the Mississippi River, about one hundred miles above St. Louis.

Topography.—The surface of the higher lands or undulating prairies is of a dark porous loam, based on a substratum of clay, which, impermeable in a degree to water, retains the moisture in the loamy upper crust, especially in wet seasons. The bottom lands, skirting the streams, are of rich alluvion, level and marshy, densely timbered in many places, or covered with rank coarse grass. The upward percolation of moisture through the crust forming the surface of the ridge lands and prairies, and the marshy character of the bottoms, give rise to exhalations that are most rife in the months of July, August, and September. Inhabitants of these bottoms, and those residing at the heads of the ravines that issue from them, are more liable to summer and autumnal diseases than the population on the ridges and prairies; indeed the head of a ravine even three or four miles removed from a marshy locality is more unhealthy than the immediate neighborhood of the marsh.

The spring and earlier part of the summer, in this and nearly all other localities in the State, were remarkable for heavy and repeated rains. For a few succeeding summer weeks, occasional lighter deposits of rain occurred, with comparatively a moderate temperature for summer; about the middle of August, hot and dry weather set in, which prevailed until the middle of September, and about this time a visitation of *purulent ophthalmia* began, that pervaded all classes and ages. From inquiry, we learn that the disease extended some distance into the interior, travelling in a westerly direction. It lasted in the vicinity of Houston almost six weeks, and was attributed to the intensely hot weather and solar light, aided by the presence of sand uplifted by the winds. Some circumstances observed in connection with the disease would seem to show its propagation by contagion, as, for example, where a number of healthy children from a distance would visit, for several hours,

families in which the disease existed, they would, in from eight to ten days, become attacked with the ophthalmia, and present the same stages of disorder as those previously attacked whom they had visited. From remarks in Dr. Banks's communication, we infer that the disease yielded to moderate antiphlogistic measures. In the severer cases the nitrate of silver, topically applied, was necessary for cure.

Cholera did not prevail in the vicinity of Houston, which is in the northern part of the county about twelve miles west of the Mississippi, although a predisposition to it was manifest from the unusual tendency observed to diarrhœa. With September, the grave forms of intestinal disease began, assuming the usual symptoms of dysentery, or dysenteric diarrhœa. The cases varied from the simplest form of febrile diarrhœa to the extremest character of dysentery attended with high febrile excitement. In some cases, the disease was associated with remittent fever, in others with intermittent. The local symptoms were often intense, the tormina and tenesmus being very distressing, and the dejections frequent. The fatal cases terminated about the ninth or tenth day. In menstruating females, morbid uterine engorgement would almost invariably occur, adding to the sufferings and dangers of the case. In these cases, dysuria and sometimes mucous cystitis, were observed.

The ordinary endemial autumnal fevers did not rage to any great extent until after the drought set in, in August. With the cooler weather in autumn their invasion decreased. Unless complicated with enteric lesions, their control was easily effected.

Influenza prevailed very generally towards the last of December, scarcely any one escaping it. It presented the usual symptoms, and was palliated, not interrupted, by any mode of treatment.

Diseases of St. Genevieve County.

This county is located on the west bank of the Mississippi, about 50 miles below St. Louis. It is the outlet to the river from the extensive mining region which adjoins the western boundary. The general surface is rather broken than undulating, presenting a succession of ravines alternating with ridges, traversed by numerous small streams. On the borders of these watercourses are limited patches of bottom land. The soil on the upland is thin and sterile, and well covered with timber, the chief of which is oak; in the

counties immediately west, immense woods of pine are stretched out, which continue far into the southwest section of the State.

About the 12th of July a sudden outbreak of cholera occurred, immediately north of the town of St. Genevieve, on the bank of the Mississippi. The number attacked within four days was eighteen, 4 whites and 14 blacks. Of these, 4 died. The visitation was confined to one locality that was isolated from the town, and adjacent to the mouth of a ravine that runs between two hills. Two cases only occurred in the town itself, and those at a period several weeks later than the above cases. With the exception of the locality being near the ravine no local causes could be discovered which would account for the disease. The exciting cause of the attacks was indulgence in excess of fruits. The cases were all well-marked *Asiatic cholera*. An unnatural prevalence of intermittent fever was noticed throughout the country in the month of August, and during the autumn.

REPORT ON THE YEAR 1852.

Diseases of St. Louis.

The same diseases prevailed this year in St. Louis, as in the year preceding, with some variation, however, as to their distribution in the various seasons, and the entire mortality for the year falls below that of 1851. Exanthematous fevers were added to the catalogue of epidemics in this year.

The amount of disease in the first quarter was greater than in the corresponding quarter of the last year; acute affections of the respiratory apparatus being increased, as well as affections of the gastro-intestinal mucous tissues. The number of deaths by acute phlegmasia of the air-passages was 121, against 57 in the same season in 1851. Consumption caused 58 deaths, against 49 in the same quarter in 1851. Cholera, diarrhœa, and dysentery were the causes of 58 deaths, against 38 in the same period in 1851. Acute affections of the brain occasioned 85 deaths, against 77 the preceding year in the same period. Scarlatina and measles were more prevalent than usual in this quarter of the year, their united mortality being 30, against 6, the mortality of this season in 1851. Typhus and typhoid fevers prevailed to about the same degree as in 1851. The aggregate mortality for the quarter is 714, against 507 for the

same period in 1851, an increase of 40 per cent. in the quarter of this year.

Measles.—The first epidemic to be noticed in this year is measles, which prevailed to a considerable extent during the first half of the year. Its advent may be dated in the final quarter of 1851, a large number of cases having occurred in November and December. The number increased in January and February, 1852; a further increase was noticed in March, and a much greater cessation in April and May. Its prevalence, in these last months, was very general, few subjects liable to the disease escaping it. As in all similar epidemics, the character of the attacks varied. In some subjects it was mild, in others grave. Some of the severest cases that we witnessed occurred in November, 1851, at the outset of the epidemic; the nervous lesions in these, during the eruptive stage, being very intense, the diarrhœa, at the decline of the eruption, profuse and intractable, yet the implication of the respiratory organs was not deep, death, in the fatal cases, resulting from the intensity of the nervous lesions, or from the exhaustion of the diarrhœa. From what we learned from others, however, acute pneumonia and bronchitis were present in some cases in the early period of the epidemic; pleurisy was then more rarely a complication. The cases presented later in the winter, when dangerous, became so from implication of the pulmonary apparatus, and, when fatal, usually terminated from the fifth to the ninth day. As the variable months of March and April set in, the same complication of disease of the pulmonary organs existed, but, so far as we noticed, the tendency to fatal results was now in a more advanced stage of pulmonary disorganization, the subjects perishing from the ninth to the fourteenth days, or later. We lost cases of this kind by laryngitis with irritative or hectic fever persisting to the fatal result on the eighteenth or twenty-fourth day of disease. In these instances, convulsions immediately preceded the fatal result, the disease was, in many subjects, the source of chronic bronchitis, and of tuberculosis of the lungs, by which death was, sooner or later, induced.

The fatality of the disease was relatively least in the last months of 1851; this was increased in the first quarter of 1852; the most fatal period of the epidemic was in April and May. The maxima of the disease, as to prevalence and mortality, were in these last months. In June its prevalence diminished; in July, the decline was more marked, and in August, it disappeared wholly from the city.

We have nothing of interest to present as to the peculiarities observed of this epidemic, if any such were notable, nor yet anything worthy of remark as to the treatment of the disease. The only statistics that we were able to obtain are the mortuary, which are found below.

SCARLATINA, ANGINA, ETC.—During the epidemic of measles, an unusual prevalence was observed of scarlet fever, and its ordinary accompaniments, angina and stomatitis. The operation of the poisons of measles and scarlet fever at the same time, viewed relatively to their interfusion, will be the subject of remark in a succeeding portion of this report.

PERTUSSIS likewise prevailed to a limited extent during the invasion of measles, the latter disease being often noticed to be the predisposing cause of the former.

CYNANCHE PAROTIDEA was also prevalent during the reign of measles and pertussis, the three diseases supervening in a few instances in rapid succession in the same subject. In a few cases coming under our notice, pertussis occurred after measles, and, during the latter, mumps supervened—the cases then becoming formidable by reason of the increased liability to convulsions; the tendency to metastasis or extension of the inflammation, first located in the parotids, to the membranes of the brain being very marked. The following tables exhibit the mortality by the diseases of which we have been speaking.

Tabular Statement of the weekly Mortality from Measles, Scarlet Fever, Hooping-cough, and Angina, during the first half of 1852.

Week ending	Measles.	Scarlet fever.	Hooping cough.	Angina.	Week ending	Measles.	Scarlet fever.	Hooping cough.	Angina.
Jan. 4	...	1	2	1	April 11	6	2	2	1
" 11	1	...	...	...	" 18	9	...	...	...
" 18	...	...	...	1	" 25	11	...	3	1
" 25	2	...	...	...	May 2	13	5	1	2
Feb. 1	1	...	...	...	" 9	13	...	1	2
" 8	2	1	...	1	" 16	7	...	...	...
" 15	...	...	...	...	" 23	6	...	...	...
" 22	2	4	...	2	" 30	12	...	...	...
" 29	2	2	...	...	June 6	6	1	...	...
March 7	2	1	...	...	" 13	4	1	1	...
" 14	3	3	...	1	" 20	2	2	4	...
" 21	4	2	...	1	" 27	1	...	1	...
" 28	4	1	...	...					
April 4	6	3	...	1	Total ½ yr.	119	29	15	14

Tabular Statement of the Age and Sex of Subjects dying of Measles in St. Louis, 1852.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 1 year	1	1	1	..	1	..	2	3	5	4	2	1	..	1	..	..	..	..	..	..	..	..	..	..	12	10	22
1 to 2 y'rs	..	1	2	..	4	2	11	7	3	2	1	2	1	2	..	2	..	..	..	..	..	..	..	..	22	18	40
2 " 3 "	..	..	1	..	3	..	5	1	4	8	..	5	..	..	..	..	..	..	..	..	..	..	..	..	13	14	27
3 " 4 "	..	1	1	..	..	..	1	2	3	2	..	..	..	2	1	..	..	..	..	..	..	..	..	1	6	8	14
4 " 5 "	..	..	1	..	1	..	..	2	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	3	7
5 " 6 "	..	..	..	..	..	..	1	3	2	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	5	3	8
6 " 7 "	..	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	3
7 " 8 "	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	2
8 " 10 "	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2	2
10 " 12 "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12 " 20 "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	1
Over 20 "	..	..	..	..	..	..	..	1	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	2	3
Age unk'wn	..	..	..	..	..	2	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	1	4
Total	1	3	6	..	9	4	22	23	22	17	4	9	2	5	1	4	..	..	..	..	..	..	..	1	69	64	133

Per cent.

Ratio of above in subjects of 5 years and under, to population of same age, 0.72
" " " 5 to 10 years of age, " " 0.14

Tabular Statement of the Age and Sex of Subjects dying by Scarlet Fever in St. Louis, 1852.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 1 year	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	3	1	4
1 to 2 yr's	..	..	2	..	..	1	..	2	..	..	..	2	..	..	..	2	..	1	..	..	..	2	1	3	3	13	16
2 " 3 "	1	..	..	..	1	1	1	..	..	..	..	2	..	..	1	..	..	..	1	..	..	..	1	1	6	4	10
3 " 4 "	..	..	..	..	..	1	..	1	..	..	..	..	..	1	1	..	..	1	..	..	..	..	1	1	2	5	7
4 " 5 "	..	..	..	..	..	1	..	1	..	..	..	..	1	1	..	..	..	1	..	..	..	1	2	..	3	5	8
5 " 6 "	..	..	2	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	3	1	6	2	8
6 " 7 "	..	..	..	..	..	1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2	4	6
7 " 8 "	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	4	2	5	7
8 " 10 "	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1	2
10 " 12 "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	1
12 " 20 "	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	2	1	3
Total	1	..	6	1	2	6	3	7	..	.	..	4	1	2	3	3	..	3	2	..	3	4	10	11	30	42	72

Per cent.

Ratio in above of deaths of subjects under 5 years to population of same age, 0.3
" " " 5 to 10 years of age " " 0.2

CHOLERA.—Passing from the subject of eruptive fevers, we notice, next in succession, the intestinal diseases, taking them up in the order observed when speaking of them in the preceding year. The most prominent of these is cholera.

This disease was not so generally distributed in the city, nor was the number attacked by it as great as in 1851. It was principally confined to the lower levels of town, mostly, as to residents, amongst the German population in the south section. It was also

prevalent to a more limited extent in the north section, and in the neighborhood of Eighth, Ninth, Tenth, and Eleventh Streets, from Franklin Avenue to Mullanphy Streets, a district much of which has been recovered from a former pond that is now filled in. It was much confined to newly arrived immigrants, and to the poorer resident population, which are densely crowded in small badly ventilated tenements in narrow courts and alleys. Occasional cases of the disease were reported in the first four months of the year; an increase of it began in May; a greater increase took place the first week in June, with a reduction in the two succeeding weeks. The last week of the month manifested an alarming increase of it, which was exceeded slightly in the succeeding first week of July, at which time the disease attained its maximum prevalence in this year. A slight reduction of it was manifest in the next two weeks, a marked diminution occurring towards the end of the month, where it maintained a uniform yet reduced rate until the middle of August, and then rapidly declined, and may be said to have disappeared as an epidemic at the end of the month. It will, however, be noticed that the weekly mortuary reports show that cases of the disease prevailed in the city during the remaining months of the year; these occurred principally among emigrants then arriving in the city. The weekly mortality by cholera during the last four months of the year is exceedingly variable; in some weeks it doubles itself on the mortality of the week preceding, and the aggregate mortality of the disease during this period much exceeds that in the corresponding period of the preceding year—a fact worthy of remark, as failing to indicate in this, as it did in other years, that the disease would renew its ravages in the succeeding spring.

Compared with the preceding year, cholera in 1852 was somewhat differently distributed as to the seasons in which it prevailed, its diffusion this year extending over a greater period of time; its intensity not being concentrated upon a few weeks in midsummer, as in other years. This will be evident to the reader, if he compare the weekly mortality by cholera in this and other years. The prominent facts in the visitation of this year are the more limited diffusion of the disease throughout the city, the smaller number of localities attacked, its prevalence in every month of the year, and its very diminished prevalence amongst the resident citizen population. Some of these facts hold good as to other years of its visitation, but as to no one year more notably than this. The following

table will, in part, illustrate what is above advanced; the reader may make more minute comparisons of the disease from the tables given in different parts of the report.

Table showing the Monthly Mortality by Cholera in 1851–1852.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1851 . . .	2	...	1	9	49	505	233	37	9	...	2	...	847
1852 . . .	3	3	1	2	35	204	304	87	35	63	28	24	789

To the enumeration of the mortality of 1852, 13 must be added, the age and sex of which are not ascertained, making the aggregate of the year 802. This addition will not materially vary the result we point out.

On examination of the foregoing table, it will be perceived that the disease was nearly uniform in its rate of prevalence in both years up to the end of May; subsequently the years vary in their mortuary results. In June, 1851, the mortality by cholera was suddenly and greatly increased, running up from 49 in May to 505 in June, an increase in one month of 456. In the succeeding month, the mortality declined to 233, in August to 37, and but eleven deaths were reported by it during the final four months of the year. In June, 1852, the total of deaths from cholera is 204, an increase over May of 169; in July, the total is 304, an increase over June of 100. The disease, in this year, therefore prevailed, when at its intensity, in a reduced degree compared with 1851, but the remaining period of this year, it continued in excess over 1851. These comparative variations are in part accounted for by the relative influx of immigrants in the two years; the immigration in 1852 largely exceeded that of 1851, particularly in the last six of its twelve months. (See Appendix for Statistics of Immigration.)

It is on the immigrant population recently landed, that the disease has, in every year of its occurrence in St. Louis, expended its violence. The causes of this may be summed up in a few words. This population, previous to its arrival in the city, has for months lived in an atmosphere of "crowd poison;" it passes through the tropical heats of the southern Mississippi in the months of May, June, July, August and September, on its way to the city; it indulges to excess in a diet to which it has been unaccustomed, namely, the succulent fibrous vegetables and scarcely ripened fruits procured on the river in the voyage from New Orleans, and the river water induces diarrhœa in all who for the first time drink it.

The meteorological circumstances to which this population is exposed on arrival would account for an undue prevalence of intestinal disease among its numbers; add to these the effects of change of habits, and we need scarcely wonder that but a brief period elapses after it is landed on our shores, before it is more than decimated by the scythe of death. It is this population that contributes most largely to the hospital wards and burial fields of our city in every year, and, during cholera years especially, it has contributed the largest portion of those dying of that pest and its cognate diseases. An idea of the destitution of this class of population, and of its liability to disease, may be gathered from the record of admission to the City Hospital alone in the one year from July 1, 1851, to June 30, 1852, which shows of 1774 admissions, 945 were natives of Ireland, 418 of Germany, 117 of England and Scotland, 106 of other foreign countries, and 188 were of the United States. A very large majority of these had been in the city but a brief period, ranging from a few hours to a few months. The English admissions were principally newly-arrived Mormon immigrants, who left their country with the view of going to the Salt Lake settlements in Utah. Of 3,719 interments reported by Dr. McMurray, the health officer, as taking place between July 1, 1851, and June 30, 1852, in the cemeteries of St. Louis, over one thousand, he states, were buried at public expense, the greatest portion being recently landed immigrants.

Table showing the Age and Sex of Subjects dying by Cholera in St. Louis, 1852.

	Jan.		Feb.		Mar.		Ap'l.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
2 yrs. and under	..	..	..	..	..	..	..	..	..	..	11	4	16	15	5	3	..	..	1	2	1	1	2	4	65
2 to 5 years	..	..	..	..	..	..	..	.	1	1	8	5	9	7	3	7	..	1	3	4	3	1	1	..	54
5 " 10 "	..	..	1	..	..	..	..	..	1	..	6	4	19	12	9	3	1	..	2	3	1	..	4	..	66
10 " 15 "	..	..	..	..	..	..	..	..	1	..	4	4	7	5	3	2	..	1	..	1	1	..	2	..	31
15 " 20 "	..	..	1	..	..	..	..	..	2	..	9	2	4	11	3	..	1	2	1	1	1	1	1	..	40
20 " 30 "	2	..	..	..	..	..	1	..	7	7	33	15	49	25	10	5	8	2	17	3	6	4	2	4	200
30 " 40 "	..	..	..	..	..	..	1	..	8	2	27	20	31	28	7	7	10	1	11	1	4	1	..	2	161
40 " 50 "	1	..	1	..	1	..	..	..	2	1	20	12	26	11	7	4	3	1	2	4	1	2	1	1	101
50 " 60 "	..	..	..	..	..	..	..	..	..	1	6	5	12	6	3	4	1	..	2	2	..	..	..	..	42
60 and over	..	..	..	..	..	..	..	..	1	..	4	5	4	7	1	1	2	1	2	1	..	..	..	..	29
	3	..	3	..	1	..	2	..	23	12	128	76	177	127	51	36	26	9	41	22	18	10	13	11	789
Age and sex not stated																									13
Total																									802

Mortality.—The total mortality by cholera in 1852 in St. Louis, is, by our compilation of the official returns, 802, a ratio of 16.34 per cent. of the aggregate annual mortality, and of 0.73 per cent.

of the entire population. Of this number, the age and sex of 789 are given—486 being males and 303 females. The ratio of deaths to ages of the population is as follows:—

	Per cent.
Ratio of deaths of subjects under 5 years to population of same age	0.78
" " from 5 to 10 years " "	0.56
" " " 10 to 15 " " "	0.33
" " " 15 to 20 " " "	0.41
" " " 20 to 60 " " "	0.80
" " 60 years and over " "	1.9

Assuming the mortality of subjects between 40 and 50 years to have been equally divided between those of 40 and 45 and those of 45 to 50 years, we have the following estimate:—

	Per cent.
Ratio of deaths of subjects from 20 to 45 years to population of same age	0.73
" " 45 to 60 " " "	1.56

In order to prevent the decimal proportions in our analysis, we take the following:—

	Per cent.
Ratio of subjects from birth to 10 years of age to population of same age	0.69
" " 10 to 20 " " "	0.37

The above would show that resistance to the fatal effects of cholera is greatest at from 10 to 20 years of age; it is then greatest in subjects under 10 years, and the resistance in subjects under 5 years, and in those from 20 to 45 years is nearly the same, while in subjects of 45 and over the dangers of cholera are greatly increased.

DIARRHŒA.—Diarrhœa prevailed to a greater degree in the first quarter of this year than is usually observed at that season. In the succeeding quarter, however, the disease was rather diminished when compared with its prevalence at the same period in the preceding year, and this comparative reduction was maintained during the summer quarter. In the last quarter of the year, the disease maintained about the same rate of prevalence as in the same quarter of 1851, except in the month of October. The mean range of the disease for the entire year, was below that of 1851. The period of greatest prevalence in this year was in June, July and August, July being the maximum month; in October, an unusually large number of cases occurred, and the monthly mortality of the disease exceeds that of any other month of the year, except July.

The remarks made on the disease as it occurred in 1851 apply to this year, its etiologic circumstances in both years being the same.

The autumnal mortality by diarrhœa in this year is especially referred in the official reports to the chronic form of the disease.

Mortality.—This is exhibited in the following

Table of the Monthly Mortality by Diarrhœa in St. Louis, in 1852, *showing the Age and Sex.*

Ages.	Jan.		Feb.		Mar.		Ap'l.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1 year and under	2	..	2	..	..	..	..	..	..	..	2	6	4	9	3	2	1	2	1	1	1	..	1	1	17	21
1 to 2 years	1	..	1	..	..	..	1	..	1	..	3	3	5	6	3	5	1	..	1	3	..	1	1	1	18	19
2 " 3 "	..	..	1	2	..	..	..	..	1	..	1	1	2	1	2	3	..	..	..	1	1	..	..	..	8	8
3 " 5 "	..	..	..	..	..	..	..	1	..	..	..	1	2	2	..	..	2	..	..	..	..	..	1	..	5	4
5 " 10 "	..	1	1	..	..	..	..	..	1	1	..	..	2	..	..	..	..	..	..	2	..	..	..	..	4	4
10 " 20 "	1	..	..	1	..	..	2	..	..	1	..	..	2	..	..	..	..	..	4	..	1	1	..	..	10	3
20 " 30 "	4	..	3	..	1	..	2	..	..	1	..	1	4	2	2	2	6	..	11	2	7	3	2	1	42	12
30 " 40 "	1	..	1	..	1	..	1	..	1	1	1	1	2	..	1	1	1	..	3	1	5	..	4	..	22	4
40 " 50 "	..	..	..	..	2	1	..	..	..	.	2	..	1	..	1	1	2	..	5	2	4	..	..	..	17	4
50 and over	1	1	..	..	1	..	2	1	..	..	2	..	..	..	1	..	3	1	6	1	1	1	2	1	19	6
Age unknown	..	..	..	..	..	..	1	..	1	..	1	..	2	1	2	1	..	1	..	..	..	1	..	1	7	5
Total	10	2	9	3	5	1	9	2	4	4	13	13	26	21	15	15	16	4	31	13	20	7	11	5	169	90

Analysis of the Mortality by Diarrhœa.—The mortality above presented, a total of 259, is 5.28 per cent. of the aggregate mortality of the year. The following is the relationship of this mortality to the ages of the population.

	Per cent.
Ratio of deaths of subjects under 5 years to population of same age	0.65
" " from 5 to 10 years " "	0.06
" " " 10 to 20 " " "	0.07
" " " 20 and over " "	0.19

Assuming, as we have done in our other tables, the mortality from 40 to 50 years to be equally distributed between the 40 and 45 years and the 45 and 50 years, we have the following result:—

	Per cent.
Ratio of deaths of subjects from 20 to 45 years to population same age	0.16
" " of 45 years and over " "	0.47

The liability to death from this disease is therefore, in this year, greatest at the extremes of life.

Dysentery.—Dysentery prevailed in this year in a reduced degree and with less fatality than in 1851. In the first four months of the year, a greater number of cases was observed than in the corresponding period of the preceding year, but the month of May, 1852, was marked by scarcely any occurrence whatever of the disease. In June and July, there was comparatively less of it than had been observed the preceding summers, and scarcely more than is usual in years when cholera is not prevalent. The maxi-

mum of the disease was in July; in August its range fell below that of August, 1851; the remaining months of the year it prevailed at a reduced rate compared with the year before. Its general character and complications were similar to those observed in the preceding year.

Mortality.—This is given in the following

Table of the Monthly Mortality by Dysentery in St. Louis, in 1852, *showing the Age and Sex.*

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 1 year	..	..	..	..	..	..	..	..	..	..	3	1	4	4	1	..	2	..	1	2	1	1	2	1	14	9	23
1 to 2 yrs.	..	..	1	..	..	..	2	..	1	..	3	..	8	5	7	4	4	1	2	2	2	3	..	..	30	15	45
2 " 3 "	..	..	..	..	..	..	1	1	..	..	1	..	2	2	..	..	..	..	3	2	1	1	..	..	8	6	14
3 " 5 "	..	..	..	..	1	..	..	..	..	..	..	..	1	2	..	..	1	1	..	..	1	..	..	..	4	3	7
5 " 10 "	..	..	..	..	..	..	..	..	..	..	..	1	..	2	1	..	1	2	..	..	2	..	1	..	5	5	10
10 " 20 "	1	..	1	1	..	..	1	1	..	..	..	2	..	1	3	..	1	..	1	2	..	1	1	..	9	8	17
20 " 30 "	1	..	..	1	1	..	1	..	..	..	2	1	1	2	5	4	3	2	4	3	4	2	..	..	22	15	37
30 " 40 "	..	1	..	..	..	..	..	..	..	..	1	1	1	2	4	1	1	2	3	3	1	1	1	1	12	12	24
40 " 50 "	..	..	..	..	..	..	..	..	..	..	1	..	..	..	2	..	2	..	..	2	1	1	2	2	8	5	13
50 and over	..	..	..	..	..	..	..	..	..	..	..	..	3	..	4	1	5	1	1	..	1	..	1	..	13	5	18
Adults age unknown	..	..	..	1	1	..	..	..	..	1	..	1	1	1	2	..	1	1	..	..	..	1	..	..	5	6	11
Total	2	1	2	3	3	..	5	2	1	1	10	7	21	21	29	10	21	10	15	17	13	12	7	5	130	89	219

Analysis of the Mortality by Dysentery.—The total mortality as above, 219, is the ratio of 4.46 per cent. of the aggregate mortality of the year, or a ratio of nearly 0.20 per cent. of the entire population. Pursuing the topic, we find the

	Per cent.
Ratio of deaths of subjects 5 years and under to population of same age	0.58
" " from 5 to 10 years " "	0.08
" " " 10 to 20 " " "	0.08
" " 20 years and over " "	0.15

Assuming the mortality at 40 to 50 years to have been divided equally between 40 and 45 and 45 and 50 years, we have:—

	Per cent.
Ratio of deaths of subjects of 20 to 45 years to population of same age	0.12
" " 45 years and over " "	0.32

The ratio of mortality is greatest at the extremes of life. The most fatal time of life for this disease is between the first and second years, or at the period of first dentition. It is the ordinary experience of physicians in our section that dysentery is one of the least fatal acute diseases that the adult encounters; in infancy, however, it is intractable and dangerous, proving fatal by superinducing meningitis. In strumous infant subjects, it is almost certainly fatal, destroying most frequently, in its acute stage, by the supervention

named; later in its attacks, its fatal result is due to tuberculosis of the mesentery. The supervention of meningitis in the dysenteries of children is almost invariably attended with reduction of the enteritic lesions, the inflammatory process seemingly being metastatic. This frequent transfer of disease from the intestines to the nervous centres, is not attributable to the incautious employment of anodynes, for there are few practitioners who have not been taught by experience to discard or be very cautious in the employment of these in the dysenteries of the young subject.

Cholera Infantum.—This disease prevailed during the summer months to an extent below that of 1851. A few cases occurred in May, an increased amount in June, although a smaller proportion than in June, 1851. In July, it was notably augmented over its rate of prevalence in the preceding months, and in the July of the preceding year; it diminished in August to about the usual rate of this month, and was rather more frequently presented in September than in the September previous. Its mortality in the five months from May to September, in this year, is by our computation 206, the exact number for the same months in the previous year, but as our population is augmented in this year fully 10,000 over 1851, the proportionate mortality of 1852 is the least. Cholera infantum in this year occasioned 10.5 per cent. of the entire mortality of subjects under 5 years of age, 4.10 per cent. of the aggregate mortality of the year, and its ratio of mortality to population under 5 years was 1.34 per cent. In 1851 it produced 11.8 per cent. of the mortality of subjects under 5 years, 4.7 per cent. of the aggregate annual mortality, and its ratio of mortality to population under 5 years of age was 1.54 per cent.

Limiting the analysis of the five months from May to September inclusive, we find that, in 1852, this disease occasioned 7.28 per cent. of the aggregate mortality of these months, and 17.16 per cent. of the mortality of subjects under 5 years of age, and in 1851 it occasioned 7.09 per cent. of the aggregate mortality of the same months, and 17 per cent. of the mortality of subjects under 5 years in the same period.

Dentition and Marasmus.—The enumeration of causes of infantile mortality would be incomplete without some notice being accorded to dentitional irritation and marasmus. These terms, viewed as mortuary causes, are related to cerebral and intestinal diseases, and might properly be merged in our consideration of disease into the one or the other of those classes, dentitional irrita-

tion being a cause of the former class, marasmus a terminal stage of the latter. We present, in a brief manner, the mortality from these causes to complete the statistics of infantile deaths:—

Monthly Table of Deaths in St. Louis, in 1852, *by Teething and Marasmus.*

	Jan.	Feb.	Mar.	Ap'l.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Teething	...	3	4	5	4	7	17	23	17	...	6	6	92
Marasmus	...	3	1	8	9	8	15	12	...	5	...	1	125

Of the above deaths by marasmus, sixty were in subjects under one year of age, 45 in subjects from 1 to 2 years; 8 in subjects from 2 to 3 years; 7 in subjects from 3 to 5 years, and 6 in subjects from 5 to 10 years. The ratio of deaths of subjects under 5 years to population of same age is 0.79 per cent.

Recapitulation of Mortality of Subjects, under 5 years, dying of Intestinal Diseases.—Cholera occasioned of these subjects 119 deaths; diarrhœa, 100; dysentery, 89; cholera infantum, 206; marasmus, 125; aggregate, 639. The ratio of this aggregate to population of same age is 4.19 per cent. Its ratio to the entire mortality of the year of subjects of same age is 32.72 per cent.

Affections of the Nervous System in Children.—Under the titles convulsions, congestion of the brain, inflammation of the brain, meningitis and hydrocephalus are reported in this and other years a large sum of the mortality in the young subject. The term convulsions is, in the official reports, most frequently appropriated to subjects under one year of age; the other forms of cerebral disease are found in the later years of our series.

Tabular Statement of the number of Children under 10 *years of age dying in St. Louis, in* 1852, *by Convulsions, Meningitis, Hydrocephalus, and allied Affections.*

Ages.	Jan.		Feb.		Mar.		Ap'l.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Total.		Aggregate both sexes.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 1 yr.	7	1	6	1	12	..	5	2	2	2	7	5	23	10	10	9	10	6	10	11	6	9	1	3	99	59	158
1 to 2 yrs.	2	1	3	..	1	..	5	6	3	1	2	6	14	11	6	4	3	3	8	2	3	..	1	1	51	35	86
2 " 3 "	..	..	1	1	1	..	1	2	1	1	1	5	3	2	..	3	1	1	2	1	3	2	1	..	15	18	33
3 " 4 "	2	..	..	1	1	..	..	..	..	..	1	3	..	1	..	..	..	..	..	..	1	..	..	..	5	5	10
4 " 5 "	..	..	..	..	..	..	..	2	..	..	1	..	2	1	..	..	..	..	..	..	1	1	..	1	4	5	9
5 " 10 "	..	..	2	..	1	..	..	.	..	1	..	..	2	1	1	1	..	..	1	..	2	..	1	..	10	3	13
Total	11	2	12	3	16	..	11	12	6	5	12	19	44	26	17	17	14	10	21	14	16	12	4	5	184	125	309

To account for the mortality represented in the above table, one of the principal causes to be considered is dentitional irritation.

Intestinal irritation, including diarrhœa, dysentery and cholera infantum, was probably the next most frequent source of affections of the cerebro-spinal system. In addition to these causes, the eruptive fevers, also pertussis, parotitis and epidemic cholera contributed to create the items of the table. The mortality of subjects of 5 years and under is in ratio to the aggregate mortality of the year of subjects of same age 10.54 per cent., and in ratio to population of the same age 1.35 per cent.

FEVERS, CONTINUED AND PERIODIC.—The relative prevalence of these diseases in this year varies from that of the year before; while continued fevers were in this year diminished, the periodic were much increased. This variation is the more remarkable from the fact that the foreign immigration in 1852 exceeded that in 1851 fully 30 per cent. Another fact worthy of remark is that the comparative general sickliness of July, August, and September, 1852, was lower than that of the same months in 1851, whereas the percentage of mortality in these months in both years was about the same, namely, 40 per cent., and the relative mortality compared with population was in 1852 reduced. Deductions upon these topics are presented in Dr. Engelman's paper, showing the comparative sickliness and mortality in St. Louis for 15 years, which will appear in a subsequent portion of our report. To that paper and the statistics in this and other parts of this report, we must refer our readers for materials wherewith to form a more elaborate disquisition on these topics than we have an opportunity of presenting in detail. We therefore dismiss the subject of fevers by merely presenting its mortuary records.

Tabular Statement of the Monthly Mortality by Bilious Fever in St. Louis, in 1852.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 5 yrs.	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	1	2	..	..	1[1]	..	..	..	4	2	6
5 to 10 "	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	3	..	..	..	..	..	..	..	..	1	4	5
10 " 20 "	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	1	1	2	..	1	..	..	..	6	1	7
20 " 30 "	2	1	1	..	..	..	1	..	..	..	1	1	5	2	6	3	2	..	3	4	..	1	2	..	23	11	35
30 " 40 "	..	..	..	..	..	..	2	..	..	..	..	..	2	..	7	4	4	2	3	2	..	..	1	..	19	8	27
40 " 50 "	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	2	1	..	1	1	..	..	..	..	5	3	8
50 and over	..	..	..	..	..	..	1	2	..	..	1	..	2	1	1	1	2	2	5	1	..	..	1	1	13	8	21
Unknown age, adults	..	..	..	..	..	..	..	..	..	..	..	..	2	1	3	1	..	..	2	1	1	..	1	..	9	3	12
Total	2	1	1	..	..	..	5	3	..	..	3	1	12	4	22	14	11	7	16	9	3	1	5	1	80	41	121

[1] Subject 2 years 4 months old.

Tabular Statement of the Monthly Mortality by Intermittent Fever in St. Louis, in 1852.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 5 yrs.	..	..	..	..	..	..	..	..	..	..	..	..	..	.	1	..	..	..	1	..	..	..	..	..	2	..	2
5 to 10 "	..	..	..	..	..	..	..	..	..	1	..	..	.	..	..	..	..	..	1	1	..	..	..	..	1	2	3
10 " 20 "	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	1	..	1	1	4	5
20 " 30 "	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	1	..	5	..	5
30 " 50 "	..	..	..	..	1	..	..	..	..	..	..	..	1	2	..	1	1	..	1	..	1	..	1	..	6	3	9
50 and over	1	..	..	..	..	..	..	..	..	..	..	..	1	..	3	..	.	1	1	..	..	..	1	..	7	1	8
Total	2	..	..	1	1	..	..	..	..	1	..	..	2	2	5	1	3	2	5	1	1	1	3	1	22	10	32

Youngest subjects above recorded: 1 of 1 year and 3 months; 1 of 1 year and 8 months.

Oldest subject above recorded: 1 of 72 years, in October.

Tabular Statement of the Monthly Mortality by Congestive Fever in St. Louis, in 1852.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 5 yrs.	..	..	..	..	..	.	..	1	..	..	..	..	1	..	4	1	1	..	..	2	..	..	..	..	6	4	10
5 to 10 "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	1	1	..	..	..	..	..	2	3	5
10 " 20 "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	2	..	..	1	..	..	..	..	4	1	5
20 " 30 "	..	..	..	1	..	..	..	..	1	..	1	..	..	..	1	1	..	1	2	..	..	..	..	..	5	3	8
30 " 50 "	..	..	..	..	..	..	..	1	..	1	1	1	1	..	..	3	2	1	5	..	..	..	..	..	9	7	16
50 and over	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	2	..	..	..	..	..	5	..	5
Total	..	..	..	1	..	..	..	2	1	1	2	1	2	..	11	7	5	3	10	3	..	..	..	..	31	18	49

Youngest subject above recorded: 1 male of 7 months, in July.

Tabular Statement of the Mortality by Typhus and Ship Fever in St. Louis, 1852.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 10 yrs.	..	1	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	..	2	1	2	1	2	1	8	5	13
10 to 20 yrs.	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	2	1	..	2	1	1	5	4	9
20 " 30 "	1	..	1	2	3	1	1	1	1	..	1	..	..	1	2	1	4	2	2	..	2	..	..	4	18	12	30
30 " 40 "	1	..	1	1	1	1	..	1	2	1	..	..	2	..	2	..	..	..	1	1	3	..	..	1	13	6	19
40 " 50 "	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	6	..	6
50 " 60 "	..	1	1	..	1	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	3	2	5
60 and over	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1	2
Total	4	2	4	3	5	3	3	2	6	1	2	..	2	1	4	1	5	2	8	3	9	4	3	7	54	30	84
																									Age unknown		1	3	4
																									Total		55	33	88

Of the above, 4 are reported under 3 years of age.

Tabular Statement of the Mortality by Typhoid Fever in St. Louis, 1852.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M	F.	M	F.	M.	F.	M.	F	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 5 yrs.	..	..	..	..	..	..	1	2	..	..	..	..	1	..	..	..	..	..	..	..	1	..	.	2	3	4	7
5 to 10 "	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2	.	1	..	1	..	..	1	5	2	7
10 " 20 "	..	..	2	1	..	..	1	..	..	2	..	..	1	..	..	2	3	1	2	1	..	2	1	3	10	12	22
20 " 30 "	1	..	4	1	2	1	1	1	2	1	1	..	3	..	4	1	7	2	5	1	2	..	2	2	34	10	44
30 " 40 "	2	..	3	1	1	2	1	..	3	..	..	2	4	1	7	..	8	..	2	1	2	..	1	..	34	7	41
40 " 50 "	3	1	..	..	2	..	2	..	..	1	..	..	2	..	1	..	2	1	3	..	..	..	..	..	15	3	18
50 " 60 "	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	.	1	1	..	..	..	..	..	.	3	1	4
60 and over	..	..	2	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	1	1	1	..	..	..	5	2	7
Unk'wn age	..	1	..	..	1	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	4	1	5
Total	7	2	12	3	6	3	6	4	5	5	1	2	12	1	14	3	25	5	14	4	7	2	4	8	113	42	155

Weekly Meteorological Table for St. Louis, from March to October, 1852.
From daily observations by GEORGE ENGELMAN, M. D.

1852. WEEK FROM	BAROMETER—CORRECTED FOR TEMPERATURE. IN ENGLISH MEASURE.						
	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Lowest.	Highest.
Mar. 29 to April 4	29.310	29.329	29.242	29.215	29.274	28.848	29.598
April 5 to " 11	29.331	29.353	29.339	29.367	29.374	28.839	29.570
" 12 to " 18	29.174	29.191	29.152	29.203	29.180	28.938	29.363
" 19 to " 25	29.237	29.245	29.181	29.208	29.218	29.002	29.375
" 26 to May 2	29.232	29.230	29.176	29.231	29.217	28.869	29.555
May 3 to " 9	29.497	29.518	29.460	29.501	29.494	29.284	29 677
" 10 to " 16	29.319	29.351	29.314	29.332	29.329	29.112	29.510
" 17 to " 23	29.543	29.570	29.513	29.506	29.533	29.362	29.744
" 24 to " 30	29.358	29.372	29.310	29.323	29.341	29.171	29.528
" 31 to June 6	29.403	29.427	29.358	29.379	29.392	29.243	29.606
June 7 to " 13	29.467	29.473	29.451	29.498	29.472	29.184	29.732
" 14 to " 20	29.524	29.527	29.477	29.479	29.502	29.355	29.768
" 21 to " 27	29.484	29.493	29.452	29.481	29.477	29.224	29.775
" 28 to July 4	29.402	29.418	29.388	29.393	29.400	29.198	29.602
July 5 to " 11	29.410	29.420	29.370	29.402	29.400	29.324	29.488
" 12 to " 18	29.528	29.548	29.496	29.513	29.521	29.383	29.596
" 19 to " 25	29.516	29.532	29.475	29.483	29.501	29.325	29.636
" 26 to Aug. 1	29.440	29.497	29.427	29.433	29.449	29.311	29.547
Aug. 2 to " 8	29.399	29.419	29.379	29.383	29.395	29.259	29.563
" 9 to " 15	29.515	29.546	29.498	29.524	29.521	29.398	29.664
" 16 to " 22	29.464	29.479	29.423	29.432	29.449	29.331	29.609
" 23 to " 29	29.446	29.466	29.406	29.446	29.441	29.354	29.612
" 30 to Sept. 5	29.574	29.606	29.525	29.545	29.562	29.397	29.657
Sept. 6 to " 12	29.502	29.520	29.451	29.472	29.486	29.258	29.612
" 13 to " 19	29.504	29.515	29.455	29.489	29.491	29.269	29.655
" 20 to " 26	29.478	29.494	29 434	29.472	29.469	29.202	29.634
" 27 to Oct. 3	29.504	29.515	29.466	29.512	29.499	29.361	29.654

Weekly Meteorological Table for St. Louis—Continued.

1852. WEEK FROM	OPEN AIR THERMOMETER. FAHRENHEIT.							CLEARNESS OF SKY.					NO. OF DAYS.		
	Sunrise.	9 A.M.	3 P.M.	10 P.M.	Mean.	Lowest.	Highest.	Sunrise.	9 A.M.	3 P.M.	10 P.M	Mean.	Fair.	Variable.	Overclouded.
Mar. 29 to April 4	44.0	50.1	57.5	47.0	49.6	29.0	77.0	3.9	5.0	5.3	4.9	4.8	3	3	1
April 5 to " 11	41.2	46.4	54.4	45.9	46.9	34.0	67.0	4.9	4.7	2.1	4.1	3.9	2	4	1
" 12 to " 18	45.2	52.6	63.4	49.2	52.3	38.5	75.5	6.1	4.9	7.6	6.5	6.3	3	4	0
" 19 to " 25	47.2	54.8	60.9	52.0	53.5	42.0	77.5	4.9	5.7	4.3	4.4	4.8	3	3	1
" 26 to May 2	55.6	66.6	73.5	60.7	64.1	40.0	87.0	5.9	5.6	5.6	5.7	5.7	3	3	1
May 3 to " 9	60.1	65.5	74.6	63.0	65.8	57.0	84.5	3.1	2.9	2.4	4.6	3.2	1	5	1
" 10 to " 16	61.0	70.0	75.3	64.6	67.5	53.0	81.0	4.9	5.7	1.7	2.9	3.8	0	7	0
" 17 to " 23	50.0	59.6	67.4	55.6	58.2	42.0	77.0	6.3	5.9	5.7	8.6	6.6	3	4	0
" 24 to " 30	64.4	76.9	83.7	70.6	73.9	54.0	91.0	7.6	7.0	5.6	5.9	6.5	4	3	
" 31 to June 6	62.0	75.9	81.5	67.0	71.6	48.0	94.0	9.6	8.6	6.7	6.9	7.9	5	2	
June 7 to " 13	57.0	69.1	77.6	62.6	66.6	47.0	89.5	6.6	6.7	7.7	10.0	7.7	3	4	
" 14 to " 20	69.0	80.6	85.0	72.5	76.8	65.0	88.5	5.3	5.1	5.6	5.6	5.4		7	
" 21 to " 27	61.3	71.5	76.9	65.3	68.8	56.0	90.0	5.4	6.6	6.9	6.6	6.4	4	2	1
" 28 to July 4	65.4	75.8	82.1	70.0	73.3	57.0	87.5	5.7	5.3	5.1	7.6	5.9	2	5	
July 5 to " 11	74.5	85.0	91.1	79.5	82.5	72.5	94.5	6.4	7.6	5.9	8.9	7.2	3	4	
" 12 to " 18	67.4	77.7	83.7	71.9	75.2	63.0	92.5	7.0	6.9	5.0	7.7	6.6	3	4	
" 19 to " 25	70.4	82.9	88.1	76.4	79.4	68.0	92.0	6.7	6.6	5.9	8.6	6.9	3	4	
" 26 to Aug. 1	68.9	80.8	87.4	75.6	78.2	60.5	95.0	7.7	8.9	7.4	7.0	7.7	5	2	
Aug. 2 to " 8	63.3	71.9	77.6	68.6	70.3	57.5	84.0	6.6	6.4	5.1	7.1	6.3	4	1	2
" 9 to " 15	63.4	71.7	79.3	69.5	71.0	59.0	84.5	4.6	5.0	4.6	7.0	5.3	3	2	2
" 16 to " 22	69.6	76.9	85.1	74.3	76.5	66.0	90.5	3.1	2.9	5.3	5.6	4.2		6	1
" 23 to " 29	66.6	77.1	85.4	72.6	75.4	55 5	90.5	7.0	7.4	7.7	8.9	7.7	3	4	
" 30 to Sept. 5	65.1	75.4	84.3	71.4	74.0	57.5	91.5	8.1	8.3	8.3	8.7	8.3	5	2	
Sept. 6 to " 12	63.2	71.5	80 5	66.9	70.5	52 5	85.5	6.9	7.4	7.3	9.6	7.8	5	2	
" 13 to " 19	69.9	66.6	73 9	66.2	66.9	52.0	85.0	2.1	2.7	4.7	2.1	2.9	1	4	1
" 20 to " 26	56.6	63.0	70.6	59.6	62.4	42.0	78.5	3.6	4.0	6.0	5.6	4.8	3	3	1
" 27 to Oct. 3	58.1	64.9	75.0	64.1	65.5	47.0	79.5	5.6	4.6	4.7	4.6	4.9	3	2	2

Weekly Meteorological Table for St. Louis—Continued.

1852. WEEK.	RAIN. Days.	RAIN. Hours.	RAIN. Quantity.	THUNDER-STORMS	WINDS DURING WEEK.[1]
Mar. 29 to April 4	3	14½	0.80	2	S. 3 4, W. 4 3 2, N.E. 2, E. 2.
April 5 to " 11	4	31	0.81	2	W. 2 3, S.E. 2, W. 2, S.E. 2, W. 3 2.
" 12 to " 18	2	13	0.56	0	S.W. 2, S.E. 2, N.W. 2, E. 2 3, S.W. 3, W. 2 3.
" 19 to " 25	2	5¾	0.59	1	W. 2 3, N.W. 2 3, S.E. 2, E. 2.
" 26 to May 2	1	4	0.44	2	N.W. 2 3, S.E. 2 3, S.W. 2, S.E. 2 3.
May 3 to " 9	4	15¾	2.61	2	E. 2 3, S.E. 2, S.W. 2 3, W. 3, N.E. 2.
" 10 to " 16	3	10¾	1.64	2	N.E. 2, N.W. 2, S.E. 3, S.W. 2, W. 4 2, S.W. 2 3.
" 17 to " 23	2	7½	0.34	1	N.W. 3, S.W. 2, W. 3 2, N.E. 2, S.E. 2, S.W. 2, W. 2.
" 24 to " 30	1	3½	0.16	2	S.E. 2, N.E. 2, S.W. 2, N.W. 2, S.E. 2, N. E. 3.
" 31 to June 6	2	8	1.30	2	N. E. 2, S.W. 2 3, W. 4, N. 3, E. 2, W. 2.
June 7 to " 13	1	½	0.05	0	W. 4 3 2, N E. 2, S.E. 2 3 2.
" 14 to " 20	4	81¾	1.89	5	S.E. 2 3, S.W. 2, W. 3, N.W. 2.
" 21 to " 27	2	16½	5.11	2	N.W. 2, N.E. 2, N.W. 3, N.E. 2, S.E. 2.
" 28 to July 4	2	5	3.25	2	S.E. 2, S.W. 2, W. 4, N.E. 2, E. 2, S.E. 2.
July 5 to " 11	2	1	0.31	1	S. 2 3, W. 4, S.E. 3 2, E. 4 3 2, W. 2.
" 12 to " 18	1	5½	0.93	1	N.W. 2, N.E. 2 3, N.W. 2, N.E. 2.
" 19 to " 25	2	2	0.77	2	E. 2, S.E. 2, W. 2 3, N. W. 2.
" 26 to Aug. 1			0.00		N.W. 2, E. 2, S.W. 2 3, N.W. 2 3, W. 2.
Aug. 2 to " 8	1	16	0.42		S.E. 2, N.W. 2, W. 3, 4, N.E. 2, S.E. 2, W. 2.
" 9 to " 15	2	8	0.51		N.W. 2 3, N.E. 3, SE. 2, E. 2, N. 3.
" 16 to " 22	3	11	0.62	2	N.E. 3, S.E. 2, S. 2, S.W. 2.
" 23 to " 29	1	¾	0.05	1	S.W. 2, W. 4, S.E. 2, N.W. 2 3, N.E. 2 3.
" 30 to Sept. 5			0.00		S.E 2, S.W. 2, W. 3, N.W. 2, N.E. 2.
Sept. 6 to " 12			0.00		E. 2 3, N.E 2, N.W. 2 3, W. 3 4 2.
" 13 to " 19	2	14	1.06		N.W. 3, N.E. 2, S.E. 2, N.W. 2.
" 20 to " 26	3	12	0.41		W. 4 2, S.E. 2, W. 3, S.W. 2 3.
" 27 to Oct. 3	2	16	1.90		S.W. 2 3, N.E. 2, S.E. 2 4 3 2.

[1] For explanation of scale of winds, etc., *vide* tables of 1854.

Weekly Mortuary Reports in St. Louis from March to October, 1852.

Week ending Sunday	Weekly aggregate of all ages.	Total of 5 years and under.	Total of cholera.	Total of diarrhœa.	Total of dysentery.	Total of cholera infantum.	Total of periodic fevers.	Total of continued fevers.
April 4	57	24	...	4	1	...	2	...
" 11	64	21	...	2	1	...	4	1
" 18	63	25	...	3	2	...	5	3
" 25	67	30	1	1	1	1	1	4
May 2	86	41	...	1	2	...	1	7
" 9	61	30	1	...	...	...	1	4
" 16	55	25	6	5	...	1	...	1
" 23	69	24	11	2	1	2	1	5
" 30	75	29	18	1	1	1	1	6
June 6	118	40	55	4	3	2	2	1
" 13	109	47	30	7	4	5	3	...
" 20	123	57	36	6	3	10	1	1
" 27	196	73	80	9	5	19	1	2
July 4	204	86	88	12	8	17	7	...
" 11	210	84	72	4	7	18	4	6
" 18	210	96	76	10	10	20	4	2
" 25	190	88	46	11	8	17	8	8
Aug. 1	167	85	34	5	9	25	10	1
" 8	160	72	39	4	10	18	12	7
" 15	139	58	20	11	9	12	12	8
" 22	124	57	20	8	7	9	14	6
" 29	128	52	11	4	12	9	13	2
Sept. 5	105	44	12	3	10	2	9	9
" 12	89	42	4	5	8	7	3	9
" 19	100	45	5	8	6	1	8	11
" 26	107	29	14	5	7	5	11	10
Oct. 3	114	45	16	8	4	3	12	11

City Hospital Report.

CHOLERA, 1852.

T. Y. BANNISTER, M. D., *Hospital Physician.*

SEX.	AGE.	TIME IN HOSPITAL.	RESULT.
Male,	20,	Three days,	Died.
"	30,	One hour,	"
"	18,	Two days,	"
"	30,	Two days,	Discharged.
"	21,	Ten days,	"
"	20,	Ten days,	"
"	19,	Thirteen days,	"
"	9,	Four days,	"
"	33,	Nine days,	"
"	30,	One hour,	Died.
"	26,	Three hours,	"
Female,	30,	Half hour,	"
"	45,	Two days,	"
Male,	50,	Ten days,	Discharged.
"	30,	Eleven days,	"
"	23,	Four days,	"

SEX.	AGE.	TIME IN HOSPITAL.	RESULT.	
Female,	35,	Three days,	Died.	
"	28,	Five days,	"	
"	40,	Six days,	"	
"	37,	Three days,	"	
"	24,	Half hour,	"	
"	30,	Six days,	Discharged.	
"	16,	Eight days,	"	
Male,	45,	One quarter hour,	Died.	
"	35,	One hour,	"	
"	28,	Two hours,	"	
Female,	4,	Two days,	Died.	German immigrants, just arrived.
"	6,	One day,	"	
"	8,	One hour,	"	
Male,	2,	One day,	"	
"	6,	Half hour,	"	
"	11,	One day,	"	
Female,	20,	Two days,	"	
"	13,	Four days,	Discharged.	
"	11,	Twenty days,	"	
Male,	30,	Twenty-two days,	"	
Female,	40,	Twenty days,	"	
Male,	15,	Two days,	Died.	
"	20,	Seven days,	"	
"	36,	Seven days,	"	
"	41,	Four days,	"	
"	25,	Six days,	Discharged.	
"	18,	Twenty-one days,	"	
"	12,	Seven days,	"	
Female,	22,	Ten days,	"	
"	16,	Two days,	Died.	
"	13,	One day,	"	
"	9,	One day,	"	
"	14,	One hour,	"	
"	12,	Ten days,	"	
"	28,	Two days,	"	
"	39,	Two days,	"	
"	11,	Two days,	"	
"	18,	Three days,	Discharged.	
Male,	20,	Nine days,	"	
"	33,	Ten days,	"	
"	27,	Six days,	"	
"	51,	Six days,	"	
"	18,	One day,	Died.	
"	34,	Two days,	"	
"	27,	One day,	"	
"	30,	Two days,	"	
"	28,	One hour,	"	
"	20,	Ten days,	Discharged.	

SEX.	AGE.	TIME IN HOSPITAL.	RESULT.
Male,	10,	One hour,	Died.
"	16,	One hour,	"
Female,	9,	Two days,	"
"	6,	One day,	"
"	28,	Ten days,	Discharged.
"	31,	One quarter hour,	Died.
"	10,	Half hour,	"
"	18,	One hour,	"
"	16,	One day,	"
"	15,	Two hours,	"
"	34,	Six days,	Discharged.
"	22,	One day,	Died.
"	30,	Ten days,	Discharged.
"	6,	Eighteen days,	"

Cholera cases mostly Germans (say three-fourths) just arrived. Cases which terminated fatally after having survived several days in hospital, passed off in profound coma, generally; and upon examination, the ventricles of the brain were always filled with serum. Treatment—the usual routine; cause—remote, unknown; proximate—Mississippi water, crowded and badly-ventilated cellars, and an inordinate indulgence in improper food. It is proper to state that a large proportion of these cases were brought to the hospital *moribund.*

Typhoid and Typhus, 1852.

SEX.	AGE.	NO. OF DAYS IN HOSPITAL.	RESULT.
Male,	30,	25,	Discharged.
Female,	20,	15,	"
Male,	30,	3,	Died.
"	27,	19,	Discharged.
"	20,	9,	Died.
"	20,	26,	Discharged.
"	22,	20,	"
Female,	20,	6,	Died.
Male,	31,	10,	Discharged.
Female,	18,	3,	Died.
"	18,	1,	"
Male,	40,	30,	Discharged.
"	55,	13,	"
"	33,	5,	Died.
"	30,	30,	Discharged.
"	37,	15,	"
"	20,	14,	"
"	22,	10,	"
"	22,	42,	"

SEX.	AGE.	NO. OF DAYS IN HOSPITAL.	RESULT.
Male,	35,	37,	Discharged.
"	30,	23,	"
Female,	21,	24,	"
Male,	22,	37,	"
"	22,	15,	"
"	28,	9,	"
"	22,	5,	"
"	60,	17,	"
Female,	18,	84,	"
"	30,	34,	"
Male,	29,	14,	"
"	35,	1,	Died.
Female,	20,	11,	"
Male,	30,	5,	"
"	30,	15,	Discharged.
"	24,	13,	Died.
"	18,	33,	Discharged.
"	33,	34,	"
"	27,	7,	Died.
"	30,	6,	"
"	40,	5,	"
"	21,	4,	"
"	35,	47,	Discharged.
Female,	20,	21,	Died.
Male,	29,	17,	"
Female,	30,	20,	"
Male,	26,	21,	Discharged.
"	26,	14,	Died.
"	30,	18,	Discharged.
"	53,	13,	"
"	30,	11,	"
"	30,	33,	"
"	52,	35,	"
"	26,	16,	"
"	27,	41,	"
"	27,	21,	"
"	26,	12,	Died.
"	20,	7,	Discharged.
"	30,	3,	Died.
"	50,	8,	"
Female,	25,	4,	"
"	32,	14,	Discharged.
"	25,	23,	"
Male,	30,	45,	"
"	21,	54,	"
"	31,	9,	"
"	30,	15,	"
"	22,	60,	"

SEX.	AGE.	NO. OF DAYS IN HOSPITAL.	RESULT.
Male,	29,	7,	Discharged.
"	28,	9,	"
"	30,	7,	"
"	25,	20,	"
"	24,	18,	"
"	19,	4,	Died.
"	23,	9,	Discharged.
"	37,	10,	"
"	40,	29,	"
"	23,	26,	"
"	22,	5,	Died.
"	26,	9,	"
"	30,	11,	Discharged.
"	22,	14,	Died.
"	30,	9,	Discharged.
"	23,	5,	"
"	47,	34,	"
"	31,	13,	"
"	35,	14,	"
"	28,	5,	"
"	60,	2,	Died.
"	22,	10,	Discharged.
"	21,	24,	"
"	22,	16,	"
Female,	18,	11,	Died.
Male,	10,	12,	"
"	24,	2,	"
Female,	25,	8,	Discharged.
Male,	30,	13,	"
"	30,	12,	"
"	39,	14,	"
"	29,	17,	"
"	17,	2,	Died.
"	50,	22,	Discharged.
"	23,	9,	"
"	20,	20,	"
"	20,	14,	"
"	19,	10,	Died.
"	19,	11,	Discharged.
"	22,	9,	Died.
"	44,	14,	Discharged.
"	36,	10,	"
"	43,	3,	Died.
"	22,	26,	Discharged.
"	20,	8,	"
"	35,	12,	"
"	22,	14,	"
"	40,	10,	"

SEX.	AGE.	NO. OF DAYS IN HOSPITAL.	RESULT.
Male,	35,	29,	Discharged.
"	30,	15,	"
"	25,	11,	"
"	35,	8,	"
"	23,	7,	"
Female,	13,	20,	"
Male,	50,	15,	"
"	52,	4,	Died.
Female,	30,	7,	"
"	25,	9,	"
Male,	14,	11,	Discharged.
"	33,	15,	"
Female,	10,	14,	"
Male,	21,	20,	"
"	28,	13,	"
Female,	22,	8,	Died.
Male,	70,	3,	"
"	32,	29,	Discharged.
"	44,	1,	Died.
"	24,	11,	Discharged.
"	29,	1,	Died.
"	40,	8,	Discharged.
"	40,	14,	"
"	26,	2,	Died.
"	56,	1,	"
"	26,	10,	Discharged.
"	19,	10,	Died.
"	19,	10,	Discharged.
"	22,	9,	Died.
"	44,	14,	Discharged.
"	36,	10,	"
"	43,	3,	Died.
"	22,	26,	Discharged.
"	20,	8,	"
"	35,	12,	"
"	22,	4,	Died.
"	40,	10,	Discharged.
"	35,	29,	"
"	30,	5,	"
"	25,	11,	"
"	35,	8,	"

Report of the Cases of Cholera among Emigrants landed from Steamboats at Quarantine Island, St. Louis, 1852. Reported by F. P. LEAVENWORTH, M. D., Quarantine Physician.

Nativity of subjects.	Sex.	Age.	Date of arrival.	Date of discharge.	Form of disease.	RESULTS AND REMARKS.
Germany	M.	52	April 26	April 26	Cholera	Died.
Ireland	F.	8	26	May 10	"	Recovered.
Denmark	M.	20	May 18	25	"	Died.
Germany	"	30	21	21	"	"
"	F.	31	22	31	"	Recovered.
"	M.	21	21	25	"	Died.
England	"	51	25	26	"	"
Germany	"	35	25	25	"	"
America	"	32	26	June 12	"	Recovered.
Ireland	"	32	26	May 26	"	Died in 3 hours.
Germany	"	32	26	27	"	Died in 2 hours.
"	"	24	28	28	"	Recovered. Sequelæ typhoid fever.
France	"	11	28	June 4	"	Died.
Germany	F.	33	30	May 30	"	"
"	M.	42	30	30	"	"
New York	"	24	30	June 3	"	"
Ireland	F.	25	June 2	6	"	"
Germany	"	32	5	17	"	Recovered.
Michigan	M.	32	5	12	"	"
Ireland	F.	23	5	12	"	Died.
Germany	M.	70	9	12	"	"
"	F.	52	9	11	"	"
"	"	30	9	15	"	Recovered.
"	M.	40	11	17	Cholerine	"
Ireland	F.	80	11	11	Cholera	Died.
Germany	"	60	11	11	"	"
"	M.	18	12	12	"	" in 3 hours.
Ireland	"	22	12	17	Cholerine	Recovered.
"	F.	18	12	17	"	"
Germany	"	10	14	18	"	Recov'd. From steamboat Atlantic.
"	"	3	14	15	"	Died. " " "
"	M.	20	14	18	"	Recov'd. *Note.*—Under the term
"	"	8	14	19	"	" cholerine we include cases
"	"	23	14	24	"	" which presented all the
"	"	12	14	17	"	" usual symptoms of cho-
"	"	25	14	17	"	Died. lera except collapse. All
"	F.	41	14	19	"	Recov'd. of the cases included in
"	"	8	14	19	"	" this bracket came from
"	"	5	14	19	"	" on board the steamboat
Ireland	"	20	14	26	"	" Atlantic, on which there
"	"	18	14	26	"	" had been fifteen deaths
Germany	"	33	14	14	"	" on the voyage up from
"	"	36	14	17	"	Died. New Orleans. The boat
"	"	30	14	17	"	" was over-crowded.
"	"	38	14	17	"	"
"	"	30	14	14	"	"
"	"	35	14	26	Cholera	Recov'd. Was in collapse.
"	M.	30	18	24	Cholerine	Died.
"	"	41	17	22	"	Recovered.
"	"	48	17	20	Cholera	Died.
"	F.	46	17	18	"	" From steamboat
"	"	43	17	17	"	" Western World.
"	"	52	17	17	"	"
"	"	34	17	28	"	"
"	"	6	17	19	Cholerine	"

Report of the Cases of Cholera among Emigrants at St. Louis—Continued.

Nativity of subjects.	Sex.	Age.	Date of arrival.	Date of discharge.	Form of disease.	RESULT AND REMARKS.
Germany	F.	5	June 17	June 21	Cholerine	Died. These subjects were
"	"	18	17	24	Cholera	Recovered. all from the steamboat
"	"	9	17	21	Cholerine	" Western World, which
"	"	13	17	20	"	Died. was loaded with two
"	M.	4	17	28	"	Recovered. hundred and seventy-
"	F.	7	17	20	"	" five paupers. Nine
"	"	26	17	28	Cholera	" were buried from this
"	"	36	18	18	"	Died. boat on its way from
"	"	1	18	18	"	Dead when New Orleans. The brought in. first recorded were
"	M.	1	18	18	"	Died. sick when landed, the
"	"	46	18	23	"	" others were attacked
"	F.	60	18	21	Cholerine	Recovered. on the island.
"	"	41	19	July 24	Cholera	"
"	M.	60	18	June 19	"	Died.
"	F.	43	18	22	"	"
"	"	36	18	30	"	Recovered.
"	M.	4	18	27	Cholerine	"
"	"	2	21	29	Cholera	Died.
"	"	24	23	26	"	Recovered.
Scotland	"	42	22	22	"	Died.
Germany	"	40	22	24	"	" of secondary fever.
Ireland	"	55	27	Aug. 5	Cholerine	Recovered.
Germany	"	30	30	July 3	Cholera	Died. Cholera supervening on continued fever.
"	"	43	July 5	5	"	Died in 2 hours.
"	"	8	10	22	"	Recovered.
"	"	19	8	8	"	Died.
"	F.	3	8	8	"	"
"	M.	3	8	8	"	" in 10 minutes.
"	F.	42	9	15	Cholerine	Recovered.
"	"	42	9	10	Cholera	Died. From steamboat
"	M.	16	8	20	"	Recovered. Columbus.
"	F.	14	8	16	"	"
"	"	21	8	10	Cholerine	"
"	M.	6	8	18	Cholera	Died.
"	F.	18	8	26	Cholerine	Recovered.
"	M.	44	10	24	"	"
Bohemia	"	30	9	9	Cholera	Died.
Portugal	"	28	13	14	"	" Cholera supervening on continued fever.
Germany	"	43	17	17	"	"
France	F.	47	13	27	"	Recovered.
"	M.	½	13	13	"	Died in 6 hours.
Germany	F.	30	17	23	Cholerine	Recovered.
Bohemia	"	24	23	23	Cholera	Died same night.
Germany	"	18	23	25	"	Recovered.
Bohemia	"	35	23	27	Cholerine	"
New York	M.	30	23	23	Cholera	Died.
Germany	"	39	26	26	"	" same night.
"	"	30	26	Aug. 6	"	Recovered.
Scotland	"	19	August 7	17	"	"
Ireland	"	21	8	9	"	Died.
"	"	45	8	12	"	"
"	"	40	9	15	Cholerine	Recovered.
Germany	"	22	30	31	Cholera	Died.
"	"	48	Sept. 14	Sept. 15	"	"
"	F.	16	14	21	"	"
"	M.	52	14	17	"	"
"	F.	34	15	16	"	"
"	"	13	18	23	"	"
"	M.	8	15	22	"	Recovered.

Report of the Cases of Cholera among Emigrants at St. Louis—Continued.

Nativity of subjects.	Sex.	Age.	Date of arrival.	Date of discharge.	Form of disease.	RESULT AND REMARKS.
Ireland	F.	27	Sept. 21	Oct. 2	Cholera	Recovered.
Tennessee	"	16	28	1	"	Died.
Ireland	M.	30	28	Sept. 28	"	" in 3 hours.
Germany	F.	6	Oct. 4	Oct. 7	"	"
Ireland	M.	30	6	20	"	Recovered.
Germany	F.	43	15	22	"	"
"	"	46	15	22	"	"
"	"	3	16	16	"	Died same night.
"	M.	29	15	28	"	Recovered.
"	"	19	23	Nov. 2	"	"
Ireland	"	35	23	Oct. 31	"	"
Sweden	F.	40	23	Nov. 7	"	"
"	M.	5	23	Oct. 23	"	Died same night.
"	F.	40	23	24	"	"
"	"	35	23	27	"	Recovered.
"	"	13	23	Nov. 7	Cholerine	"
"	M.	40	30	Oct. 30	Cholera	Died same night.
Ireland	"	6	Nov. 2	Nov. 3	"	"
"	F.	22	2	10	"	" Cholera supervening on fever.
"	M.	32	2	12	"	Recovered.
"	F.	9	2	13	"	"
"	"	30	2	10	"	Died. Disease supervened on parturition.
Germany	"	58	2	10	"	Recovered.
"	"	23	2	20	"	"
"	M.	74	2	5	"	Died.
"	F.	44	3	20	"	Recovered.
"	M.	55	3	11	"	"
"	"	17	3	15	"	Died.
Ireland	"	12	3	7	"	"
Scotland	F.	23	7	7	"	" same night.
Italy	M.	57	5	5	"	"
Germany	"	17	7	22	"	"
"	"	24	7	18	"	Recovered.
"	F.	25	7	10	"	Died.
"	M.	33	7	9	"	"
"	"	20	10	13	"	"
"	"	37	10	Dec. 1	"	Recovered.
"	"	50	10	Nov. 10	"	Died same night.
"	F.	17	10	18	"	Recovered.
France	"	62	10	10	"	Died same night.
Ohio	M.	26	10	10	"	" "
Germany	F.	38	10	15	"	"
"	M.	53	10	10	"	"
"	F.	38	12	20	"	Recovered.
Ireland	M.	35	14	14	"	Died same day.
Germany	"	10	15	16	"	"
"	"	7	17	18	"	"
"	"	2	17	20	"	Recovered.
"	"	48	23	23	"	Died before reaching hospital.
"	"	40	23	23	"	" same day.
"	F.	20	23	23	"	" same night.
"	F.	35	23	Dec. 24	"	Recovered. Delivered prematurely December 1.
"	M.	3	23	Nov. 23	"	Died.
Bohemia	"	17	28	28	"	"
"	"	2	28	28	"	"
Ireland	"	55	Dec. 1	Dec. 2	"	"
"	F.	60	1	1	"	"
"	"	18	1	3	"	"
"	"	24	1	3	"	"
Germany	"	7	1	6	"	"
"	M.	10	1	8	"	Recovered.

Recapitulation of Foregoing.

Ages.	Males admitted.	Males dying.	Females admitted.	Females dying.	Total admitted.	Total died.
Under 5 years	10	7	2	2	12	9
5 to 10 "	8	4	10	4	18	8
10 to 20 "	13	8	14	5	27	13
20 to 30 "	16	9	13	8	29	17
30 to 40 "	19	12	21	10	40	22
40 to 50 "	16	12	13	5	29	17
50 to 60 "	9	7	3	2	12	9
60 years and over	3	3	5	4	8	7
	94	62	81	40	175	102

Of the above, 8 died within 3 hours; one more within 6 hours; and 12 more are reported as dying on the same day or night of their arrival, or within 12 hours.

Report of Cases of Diarrhœa received into the Quarantine Hospital, 1852.

Nativity of subject.	Sex.	Age.	Date of reception.	Date of discharge.	RESULT AND REMARKS.
Germany	M.	1	Jan. 6	Feb. 4	Recovered.
"	F.	14	Feb. 20	Mar. 10	"
"	"	5	20	10	"
"	"	2	20	10	"
Ireland	M.	28	April 12	April 13	Died.
Germany	"	11	26	30	Recovered.
"	"	6	26	30	"
Ireland	"	4	26	10	"
Germany	F.	12	May 21	24	"
"	"	¾	21	24	"
Massachusetts	M.	21	25	June 1	Died.
France	"	19	28	1	Recovered.
"	F.	9	28	4	"
Ireland	M.	26	June 2	12	"
Germany	"	22	3	6	"
"	F.	41	3	6	"
"	M.	25	4	15	"
"	F.	2½	9	12	Died.
England	M.	20	11	15	Recovered.
Germany	F.	47	17	20	"
"	"	27	17	20	" From steamboat
"	M.	30	18	20	" Western World.
"	F.	19	21	24	"
Ireland	M.	38	17	18	Died.
England	F.	17	July 1	3	Recovered.
Bohemia	M.	28	1	3	"
"	"	32	1	3	"
Germany	F.	42	9	August 3	"
"	M.	2	11	July 26	"
"	"	48	10	18	"
Bohemia	"	4	9	13	"
Germany	"	4	13	14	Died.
"	F.	40	17	20	Recovered.
"	M.	55	21	27	"
"	F.	48	21	27	"
"	"	19	21	27	"
"	M.	24	21	24	"
Bohemia	F.	3	24	24	Died same night.
Germany	M.	2½	23	26	Recovered.
"	"	26	24	26	"
"	F.	32	25	27	"
France	M.	22	24	26	"
Bohemia	"	30	August 5	11	"
"	F.	31	8	11	"
Ireland	"	20	5	11	"
Germany	M.	26	8	11	"
"	"	34	Sept. 14	17	"
"	"	½	14	15	Died.
Ireland	F.	½	25	27	"
"	M.	1¼	28	Oct. 7	"
New York	"	17	Oct. 6	8	Recovered.
Germany	F.	22	15	20	"
"	"	14	15	20	"
"	M.	49	15	21	Died.

Quarantine Report, 1852. *Diarrhœa.*—Continued.

Nativity of subject.	Sex.	Age.	Date of reception.	Date of discharge.	RESULT AND REMARKS.
Germany	M.	47	Oct. 15	Oct. 21	Recovered.
Ohio	"	30	20	20	Died.
Germany	"	8	20	22	Recovered.
Illinois	"	26	22	26	"
"	F.	19	22	26	"
Ireland	M.	22	24	30	"
Sweden	F.	2	26	Nov. 2	Died.
"	"	2½	28	7	Recovered.
Germany	"		29	1	Died.
Ireland	"	2	Nov. 2	6	Recovered.
"	"	2	2	11	Died.
"	"	12	2	12	Recovered.
"	M.	2	2	8	Died.
"	F.	34	2	4	Recovered.
"	"	6	2	13	"
Germany	"	1½	2	4	"
"	"	2½	2	4	Died.
Ireland	M.	2	3	5	"
"	"	4	7	10	"
"	"	4	5	7	Recovered.
Scotland	F.	27	5	7	"
Sweden	M.	12	2	7	"
Germany	"	24	7	13	"
France	F.	13	10	13	"
Germany	"	22	10	13	"
"	"	20	10	13	"
"	"	33	11	13	"
"	M.	7	11	13	"
"	F.	28	12	15	"
"	"	6	13	19	"
"	M.	48	16	19	"
"	"	2	17	20	"
"	"	25	23	28	"

Report of Cases of Diseases not before enumerated which occurred at Quarantine, 1852.

Nativity of subjects.	Sex.	Age.	Date of arrival.	Date of discharge.	Form of disease.	RESULT AND REMARKS.
Missouri	M.	40	Jan. 4	Jan. 29	Erysipelas	Recovered. Returned Californian.
Germany	"	4	12	16	Pneumonia	Died.
"	F.	5	6	Feb. 4	Remittent fever	Recov'd. } This term implies
"	"	34	6	7	Puerperal "	Died. } bilious fever.
"	M.	34	14	14	Erysipelas	Recovered.
Scotland	"	27	11	18	Remittent fever	"
Missouri	"	21	Feb. 3		Variola	} Sent to Smallpox Hospital.
"	"	29	9		"	} Both from California.
Ireland	"	24	17	24	Remittent fever	Recovered.
Germany	F.	34	20	20	Typhoid "	Died.
Ireland	M.	30	21	Mar. 1	Remittent "	Recovered.
"	"	23	21	8	Rheumatism	"
"	"	38	21		Variola	Sent to Smallpox Hospital.
"	"	20	Mar. 9	20	Typhus fever	Recovered.
"	"	12	9	12	Remittent "	"
Germany	"	23	19	Oct. 21	Phthisis	Much improved in health.
Ohio	"	24	19	April 9	Typhoid fever	Recovered.
Ireland	"	20	21	8	Rheumatism	"
Germany	"	26	27	10	Typhus fever	"
"	F.	30	21		Variola	Sent to Smallpox Hospital.
Ireland	M.	21	26	May 25	Typhoid fever	Recovered.
"	F.	6	26	10	Remittent "	"
"	"	20	May 5	14	Puerperal "	" Abortus on steamboat May 2.
N. Carolina	M.	42	11	18	Typhoid "	Recovered. } Convalescent
France	"	11	28	June 4	" "	" } on landing.
Ireland	"	36	June 2		" "	" }
Germany	"	24	3	8	" "	" Convalescent on landing, remov'd by friends.
"	F.	1	5	7	Marasmus	Died.
"	"	19	10	12	Intermittent fever	Recovered.
Ireland	M.	25	11	20	Typhus "	Died.
"	"	½	11	11		" Brought in dying.
"	F.	13	12	20	Typhoid "	Recovered. Convalescent when landed.
Germany	M.	27	17	July 7	Syphilis	"
"	F.	40	19	June 28	Rheumatism	"
"	"	3	27	July 18	Remittent fever	"
France	M.	43	16	June 24	" "	"
"	"	21	19	24	" "	"
Virginia	"	55	22	July 24	" "	"
Ohio	"	23	26	2	Disease of heart	Died.
Ireland	F.	30	27	8	Puerperal fever	Recovered.
U. States	M.	22	July 1	1	Fever	Died. Returned Californian.
"	"	54	1	12	Ch. dysentery	Removed by relatives, "
"	"	42	1	3	Remittent fever	Died (of cholera supervening, was also from California).
Germany	"	1	7		Pertussis	Died suddenly with convulsions.
"	F.	25	8	11	Remittent fever	Recovered.
Canada	M.	21	9	14	Intermittent "	"
Ireland	"	27	14	21	Remittent "	"
Scotland	"	22	15	21	" "	"
New Jersey	"	35	15	18	Intermittent "	"
Germany	"	30	16	16	Fever	Died shortly after admission.

Report of Cases of Diseases not before enumerated which occurred at Quarantine, 1852—Continued.

Nativity of subjects.	Sex.	Age.	Date of arrival.	Date of discharge.	Form of disease.	RESULTS AND REMARKS.
Germany	F.	6	July 23	July 29	Scarlet fever	Recovered.
"	"	1	23	30	" "	"
"	M.	4	23	30	" "	"
"	F.	6	24	Aug. 5	" "	"
England	M.	4	25	4	" "	"
Spain	"	26	23	July 31	Remittent fever	"
Scotland	"	9	24	29	" "	" Convalescent on admission.
Ireland	"	23	23	30	Intermittent "	"
Germany	"	52	25	29	Typhoid "	" Convalescent on admission.
"	"	14	25	29	Intermittent "	"
Ireland	"	6	24	28	Enteritis	Died.
Bohemia	F.	28	Aug. 5	Aug. 12	Remittent fever	Recovered.
"	M.	32	5	12	" "	"
Scotland	"	24	5	28	Typhoid "	Died.
Tennessee	"	16	5	9	Intermittent fever	Recovered.
Ireland	"	28	8	11	" "	"
"	F.	26	8	13	" "	"
"	"	3	9	14	" "	"
U. States	M.	30	11	Sept. 3	" "	" From California.
Germany	"	38	23	Aug. 29	" "	"
"	"	26	29	Sept. 6	Remittent "	"
"	"	23	Sept. 14	Oct. 2	" "	"
Maryland	"	39	18	Sept. 26	" "	"
Germany	"	25	18	25	" "	"
Ireland	"	24	19	Oct. 2	Intermittent "	"
"	"	27	22	Sept. 29	Remittent "	"
"	"	29	Oct. 5	Oct. 23	" "	"
Saxony	"	24	9	14	" "	"
Germany	"	53	20	31	Hepatitis	Died.
Sweden	F.	20	23	Dec. 8	Phthisis	"
Ireland	"	6	Nov. 2	Nov. 8	"	"
"	M.	48	2	18	Typhus fever	"
"	"	23	2	12	" "	Recovered.
Germany	"	19	1	11	Remittent "	"
Scotland	"	31	1	11	" "	"
Germany	"	15	1	11	" "	"
"	"	18	1	11	" "	"
Scotland	F.	2	5	6	Marasmus	Died.
France	M.	44	11	26	Enteritis	Recovered.
Ireland	F.	40	12	Dec. 10	Erysipelas	"
Germany	M.	35	23	1	Dysentery	"
Negro slave	"	35	23	Nov. 24	Remittent fever	Died. From California.
Germany	"	19	27		Varioloid	Sent to Smallpox Hospital.
"	"	10	Dec. 1	Dec. 7	Dysentery	Died.
"	"	4	1	24	"	Recovered.
"	"	24	7	24	Typhoid fever	"
Ireland	F.	12	12	25	Remittent "	"

DISEASES OF THE STATE BEYOND THE LIMITS OF ST. LOUIS.

The general character of the communications received by us, referring to the prevalent diseases of the agricultural districts of the State, in this year, bears out the statement made in the opening pages of our report, namely: that the diseases of the commercial centre are the prevailing diseases of the State. We shall, therefore, condense as much as possible our remarks in the present division of the report, taking up, first, the progress of cholera, and tracing it in very brief terms.

Cholera in St. Louis County.—The following letter refers to an irruption of this disease, which occasioned much alarm in the county, in May, 1852. It was furnished by Dr. J. J. Dupuy, then of St. Louis:—

ST. LOUIS, JULY 2, 1852.

"DR. REYBURN—

"DEAR SIR: In complying with your request to furnish an account of the character of the diseases and local peculiarities of the country which came under my observation during my brief probation on a portion of the Pacific Railroad, now in progress of construction, I have thought it best to limit myself to a strict record of facts as they were presented. I leave you to draw from them such deductions as may seem to you most reasonable and appropriate. If they can, in any way, aid you in your investigations, or assist in elucidating any of the obscurities connected with the cause of the disease, I shall feel gratified in having in some measure served you.

"During the time of my continuance as attending physician, the disease which attracted pre-eminent consideration was cholera, bearing all the characteristic features of that scourge, without any unusual modifications. The sudden seizure, copious rice-water discharges, continually recurring cramps in the extremities, and tendency to rapid collapse, were the invariable symptoms in every case, with unimportant variations in the order of their appearance; some of the cases were marked by diarrhœa of variable continuance previous to the invasion of the cholera, but I was assured, in other cases, that there were no premonitions, or, if any, so slight as to be unworthy of suspicion or regard. Diarrhœa was quite prevalent during the time among the laborers, but yielded to the ordi-

nary remedies with greater or less facility in every case. I saw several instances of bilious fever, and uniformly found a diarrhœa a prominent symptom. Indeed, the choleric cause manifested its impression upon the system in every case that came under treatment, coinciding, in this respect, with all previous seasons and localities in which it has prevailed.

"The laborers were chiefly Irish, in the lower walks of life, addicted to intemperance, irregularities of living, and habits of alternate idleness and industry, spending their leisure time in debauchery, and unnecessary and careless exposure. The tenements in which they lived were framed shanties, variably situated on the hill-tops, slopes, and ravines or valleys, imperfectly ventilated, and deficient in cleanliness, though in every respect as decent and comfortable as the same class are accustomed to occupy in this or other large cities, and, in consideration of the advantages of a free atmosphere and country life, would lead to the conviction that their condition was greatly improved. It is proper to mention, in this connection, that the disease was not confined to the laborers, strictly so called, of the class I have before mentioned. In the family of one of the contractors, living in a tenement more comfortably finished, more freely ventilated, and, in point of cleanliness, much better kept, but situated on the section where most of the sickness occurred, there were several fatal cases, two among the females of the family, where the habits or mode of life could hardly be suspected as the exciting cause.

"The sickness was chiefly upon the 15th and 16th sections, especially the latter, where the proportion of cases was not less than 5 to 1. The greater amount of work on this portion of the road, requiring an increased number of laborers, may reasonably be regarded as having its influence on the greater proportion of mortality here. As this division presented some characteristics more prominent than the former, I shall select it from my representation, mentioning, however, that it is only a magnified delineation of the adjoining country, through which the road lies. The general contour, as far as my observation extended, is the same. This region, lying about sixteen miles from St. Louis, to some four or five miles southeast of Manchester, is very irregular and much broken in its general aspect, presenting a continual diversity of high hills and deep ravines. Indeed, it is worthy of note, that in the whole line of forty miles now under contract, the only two hills of such elevation and

magnitude as to render it more feasible to tunnel than to grade in the ordinary way, occur upon this 17th 'Section.'

"The lands, for the most part, I regarded as inferior in point of fertility, and although greater portions were covered with quite a luxuriant growth of forest timber, those portions which had been cleared and subjected to cultivation, afforded rather a discouraging prospect, and other parts appeared to be abandoned as unprofitable for tillage. The soil was shallow, as appeared upon the banks where the grading had been effected, presenting a yellow or red argillaceous subsoil, which extended for many feet below the surface, and underlaid by hard strata of limestone rock, requiring the free use of powder to remove. These strata of stone constitute the chief character of rock through which the tunnelling had to be prosecuted.

"The water used was derived from numerous springs in the vicinity. It was subjected to no other test than that of the senses, but, as far as such observations could decide, presented nothing peculiar. In appearance, it was remarkably clear, affording a slight but perceptible limestone taste, far less obvious than most of the waters of that character which I have tried in this and other limestone countries, and, among those who used it, was regarded as well flavored and agreeable.

The season has been marked by some peculiarities which may probably be deserving of attention. The spring has been cold and backward, accompanied with such an unusual amount of rain as to cause the planters to express apprehension of their various crops. Anterior to the time of my engagement on the road (29th of May), there had not been a single occurrence of these continued spells of warm weather, which usually precede the advent of summer, and give a foretaste of its oppressive heat. It was during the week in which I was then engaged that the first occurred, but whether it in any way had its influence in regulating the amount of disease, I am not prepared to affirm, my impression, however, is, that the diminished number of cases that appeared in the interior between my arrival and departure, may be sufficiently explained by the fact, that the first startling outbreak of the disease produced alarm that caused many to leave, and thus diminish the aggregate amount of material on which the disease could manifest itself; and, secondly, by the prompt attention to premonitory symptoms. Nor am I prepared to state whether those laboring in the sun, or others constantly engaged in tunnelling operations, were most liable to attack, but, as far as the location of the cabins in which they

slept is concerned, whether upon the free exposure of the hill-tops, or under the dense forest shades of the valleys, there seemed to be no difference in this regard.

"In consideration of the unequal distribution of disease upon the various 'sections,' and that the habits of living of the laborers were with great uniformity the same, and of the occurrence of several cases in the family of the contractor under better circumstances, I was induced to ascribe it to some local cause, but how to discover and define, to give to it a 'local habitation and a name,' was a problem too mysterious and inscrutable for me to solve."

Cholera in St. Charles County.—Between the 1st and 20th of July, a serious outbreak of the disease occurred in the upper part of this county in a new German settlement adjacent to Naylor's store, about 20 miles from St. Charles, the county seat, and midway between the Missouri and Mississippi Rivers. The visitation was confined to this settlement, which had recently received a considerable addition of European immigrants, amongst whom the disease broke out. The number of deaths was reported to be eighty.

In *Gasconade County*, as we learn from Dr. Nassee, light cases of cholera, very different from those of the previous year, occurred in the non-acclimated immigrants, seldom affecting those who had sojourned any length of time in the county.

In *Boone County*, a few cases of the disease occurred in Rocheport on the Missouri River, about 100 miles from the mouth, in the early part of July.

In *Cooper County*. From Dr. Charles Chandler we learn that, during the summer, the disease prevailed in a small village a few miles from Booneville. The disease was very malignant, and confined itself chiefly to the dissipated class.

In *Chariton County*. Towards the end of October, several cases were reported in Brunswick, about 160 miles above the mouth and on the north bank of the river. These were in a family of immigrants from Kentucky on their way to Davies County, Mo.

In *Lafayette County*. From the *Lexington Express*, we find that the disease prevailed in Lexington and other parts of this county for several weeks between July 1st and August 10th.

The disease in this year was more sparsely distributed in the counties on the Missouri River, than in the previous year; indeed, its prevalence in that section of the State scarcely excited any attention. It was in the southeastern section, in the counties on or adjacent to the Mississippi, a section but little invaded in the pre-

ceding year, that its most violent outbreaks occurred. The earliest and most severe visitation in this section, in this year, was *Cape Girardeau County*, at Jackson, the county seat, several miles west of the Mississippi. An intelligent citizen of the place informs us that, in the early part of June, the weather was unusually cool and humid, at which time diarrhœa became very prevalent. Shortly after the weather became dry and sultry, when cholera broke out. At first it appeared like an attack on a besieged city; a few scattering cases occurred, the surrender, as it were, of the sentinels at the outposts; soon the grand assault set in, vigorously and fearfully destructive, the entire place being beset by the enemy. The entire population of the town, at this time, numbered about 350, but, by desertion, its ranks were reduced at the time of the outbreak to about 200, and, in the space of two weeks, one-fourth of this population was cut off. The disease first appeared on Friday, the 11th of June, and increased in violence until Sunday the 20th, when the panic reached its height, and a general retreat of the inhabitants ensued. With the exception of a few, whose noble spirit of sympathy for the sufferers detained them at their fearful post, all who were not prevented by sickness already in their families fled the place. On Monday, the 21st, the epidemic had attained its crisis. Nine persons were lying dead in the town, and not more than six able-bodied citizens were left to attend the sufferers. The disease then subsided, and, on Saturday the 26th, the last fatal case occurred. Assistance was generously afforded the sufferers by citizens of Cape Girardeau, who went to Jackson during the scourge.

The exact mortality in the town is stated by Ralph Guild, Esq., to have been 35 whites and 18 blacks. In the adjacent portions of the county, the mortality is estimated at 40. But eight or ten of the inhabitants of the town passed through the epidemic without experiencing an attack of the disease.

In *Washington County*. A letter from Potosi of date August 9th, states that cholera had been raging in the town and vicinity for three weeks, twenty-five persons having died of it. The town was almost deserted, business was suspended, and great distress was occasioned. It was still prevalent at the date of the letter. This county is located west of St. Genevieve County. Potosi, the county seat, being about 40 miles nearly due west of the town of St. Genevieve and 60 miles southwest of St. Louis.

In *St. Genevieve County*. Scattering cases of the disease appeared in this county in July, and, at the same time, in *Scott County* a

severer visitation prevailed. This last county is located south of Cape Girardeau, at the head of the immense swamp district between the Mississippi and St. Francis Rivers. The one prominent fact may be briefly stated, that throughout the entire of the southeastern section of the State, the disease was very generally distributed in this year and to an extent previously unknown in that section.

Erysipelas in Howard County.—From Dr. G. M. B. Mangles, of Fayette, we learn that

Epidemic erysipelas made its appearance in Howard County in January of this year, prevailing chiefly in a district of about 10 miles in width by 18 or 20 in length, with scattered cases in other sections of the country. The affected district is a high ridge of rich arable land, superimposed on carboniferous limestone, and lying between the Bonne-Femme and Manitou Creeks. The bottoms on these creeks are from half a mile to one mile wide, and subject to inundation, in addition to which numerous shallow lakes are distributed over them. These bottoms are the selected localities of autumnal fever. The early part of January in this year was exceedingly cold; at the end of the month, when the disease was at its height, a thawing temperature prevailed. At the same period there was an unusual amount of simple inflammatory angina, and measles prevailed with unusual virulence, attacking adults as well as children. Several cases of this disease were presented in which the subjects were for the second time attacked.

In his communication, Dr. M. adduces an extended series of cases to prove the contagiousness of erysipelas, confining his remarks chiefly to this point. The treatment he found to be most successful was the quinine and antimony in combination, with the employment of an emeto-cathartic, or a simple cathartic in the beginning. The topical remedies found most useful were solutions of the chlorate of potash or nitrate of silver. In his paper, he advances the opinion that the disease simulates closely *diphtherite*, as described by Bretonneau, the only remarkable difference being the liability of the disease, as witnessed in Missouri, to the evolution of erythematous eruption on the face. The cases detailed by Dr. M. may be found in the September number of the *St. Louis Medical and Surgical Journal* for 1852, p. 392, to which we refer our readers.

In *Platte County.* In the January, 1853, number of the *New York Journal of Medicine* is found a report by R. T. P. Ridley, M. D., of Weston, Mo., of "Cases of erysipelas which occurred in Platte

County Missouri, in which there were marked evidences of the propagation of the disease by contagion." These cases occurred in January and February, 1852; for their details we refer to the journal above quoted. The connection of puerperal peritonitis with erysipelas is remarked on at the close of the report.

In *Jackson County*. From Dr. H. L. Hereford, of Westport, we learn that this disease occurred in that neighborhood in the winter of 1852. The first cases that appeared proved fatal. The affection first manifested itself in the throat, nor was it until from the third to the seventh day that the erythema was displayed upon the surface. It then diffused itself over the face and extended to the scalp. The symptoms are not detailed, further than by the expression that they were such as are ordinarily presented in epidemic erysipelatous fever or "black tongue." Dr. H. bled copiously in the outset of each attack, following this measure by the exhibition of tartarized antimony to tolerance. On the decline of the eruption, a supporting treatment, consisting of cinchona, quinine, or wine was adopted. Calomel, he states, was only used to combat cerebral complications. After the above treatment was adopted, the fatality of the disease was suspended. The diluted mineral acids were employed as topical applications to the throat; the solid nitrate of silver, applied so as to cauterize deeply, was found successful in aborting the external erythema.

Diseases of Gasconade County.

Dr. Aug. Nassee, of Hermann, informed us that:—

Angina with stomatitis prevailed epidemically in this county, confined chiefly to Lautre Island, and the bottom on the Gasconade River. Both adults and children were affected by it. The disease appears to have presented itself in the form of stomatitis ulcerosa, whitish round pustules on an inflamed base occurring beneath the tongue, or on the inner lining of the lips. When these pustules formed, the tissues of the internal cheeks, of the gums, palate and posterior fauces, were rapidly involved in the diseased action, and the Schneiderian membrane became engorged. Painful deglutition set in, together with swelling of the lower portion of the face, of the glands of the neck, profuse salivation and great fetor of the breath and secretions of the mouth and throat. Chilliness, followed by febrile reaction, was early manifested, and the secretions of the intestines were disordered. The affection of the mouth and throat

progressed, terminating by desquamation of the superficial tissues, leaving the submucous stricture of a deep red color. In the height of the eruption in the mouth, large erythematous patches, fleeting in continuance, were distributed over the body. The duration of the disease was from ten to twenty days. Dr. Nassee attributed the disease to dentition, inappropriate diet, exposure to humidity, and is disposed to view it as infectious in its distribution. The treatment adopted in the disease was saline laxatives, mucilaginous gargles followed by a gargle of bichloride of mercury gr. j, dissolved in distilled water f℥vj, and, in some cases, the lime-water mingled with infusion of sage, or the chlorine water. The autumnal periodic fevers prevalent in this section, in this year, were unusually malignant, being frequently complicated with convulsions or intractable diarrhœa. Since the occurrence of cholera, it is remarked that all diseases, even the most simple, are accompanied by diarrhœa and vomiting.

Diseases of Cooper County.

From Dr. C. Q. Chandler, we learn that measles prevailed for three months, during the spring and summer of this year, in this county, the general character of the cases being mild.

PERTUSSIS likewise prevailed as an epidemic, and frequently united with fatal complication of pulmonic and cerebral disease.

ERYSIPELAS prevailed in the southwestern section of this county and in the adjoining county of Moniteau, during the winter of 1851 and 1852. This disease, together with puerperal fever, raged in a most malignant and fatal form. The onus of disease in the erysipelatous epidemy expended itself on the brain, inducing death by coma. The general type of the cases was said to be typhoid; in some instances it was engrafted upon remittent fever. The mortality was very great, the subjects often perishing within 24 hours of the commencement of the attack.

Diseases of Andrew County.

VARIOLA.—From Dr. Wm. Burnett, of Savannah, we learn that this disease made its appearance in Savannah 22d January, 1852, and within the limits of three or four days from its first appearance some twenty persons in different families were affected with the contagion; some 55 persons, members of the same families in which

the disease first broke out, have had it. All had it in its modified form, save those unprotected by vaccination, 26 in number, 10 of whom had confluent and 16 distinct smallpox. Some ten or fifteen other persons had a fever of 3 or 4 days' duration, analogous to the initial fever of variola; we could attribute it to no other cause than variolous influence. Every grade of the disease was observable, from a simple fever without any eruption, to its most malignant form.

Causes.—How, or by whom, the disease was first introduced, we are unable to say, but it was supposed to be communicated by a physician who was treating a case some 12 miles from town, who, after returning, was frequently at church, a place where all had been who were first attacked by the disease, many of the number not having been elsewhere. The physician himself had varioloid, but not till after the lapse of some 3 or 4 days after his last visit to the church, which was 12 days before the first case of smallpox. Those last taking the disease, caught it from their own families. The period of incubation was from 14 to 17 days, supposing they caught the disease upon the introduction of the fever. There were many exposed, who had been previously vaccinated, or were vaccinated as soon as possible after their exposure to the contagion, who escaped entirely, some of the number not having been brought under the vaccine disease for 10 or 12 days after exposure; and vaccination, in a few instances, I thought, excited varioloid.

Mortality.—Nine persons died, 2 with cerebritis; 2 with pneumonia; 4 with malignant smallpox; and 1 from extreme exhaustion. The two who died of cerebritis, and one of pneumonia, died about the 8th or 9th day of the eruption, the malignant cases, about the 6th or 7th, the others between the 15th and 20th day. All save 3 had it in its confluent form.

Diseases of Buchanan County.

From Dr. A. Kerns, of Boyer's settlement, we learn that typhoid fever, which previously had been unknown as an epidemic, prevailed extensively throughout the county during the last quarter of the year. The previous summer and autumn had been comparatively healthy; the cases of malarious fever then prevalent having been mild, and yielded readily to treatment. The weather during the autumn was very variable, presenting sudden and frequent changes from warm to cold and from dry to wet, with

interludes of sleet and snow. These variations continued until the second week in December, when the temperature became uniformly cold, which continued until January opened, which was a moderate, pleasant winter month. To these frequent atmospheric vicissitudes is the epidemic attributed. The general course of symptoms presented in this epidemic corresponds with the description we have given of the disease as it exists in St. Louis, and the treatment adopted is the same as noticed when speaking upon this topic in that portion of our report.

The complications presented in this epidemic were pneumonia or bronchitis; these, however, were not common. Irritative cough, with profuse expectoration of tenacious mucus, attended the stage of convalescence, which was invariably protracted. Relapse or recurrence of the disease seldom occurred. No age, sex or race was exempt from its attacks, when exposed to its causes; frequently it visited the entire members of a household, and, hence, was commonly believed to be contagious. Among negroes, it was severe, intractable, and fatal. The attacks lasted from 18 to 35, and, in some instances, 60 days. Furuncle often attended the stage of convalescence. Sudamina, and rose-colored eruption, were not often noticed in the disease; hemorrhage from the bowels frequently supervened.

INFLUENZA, we learn, from the same correspondent, prevailed in that county during the months of January and February, subjecting to its attacks almost every age, sex and race. The symptoms, as described by Dr. Kerns, present no marked variation from those ordinarily presented in epidemic catarrh. The treatment adopted was expectant.

Diseases of Marion County.

In a communication from Dr. Banks, of Houston, we are informed that two epidemics appeared in this year in Marion, namely, pertussis and dysentery. The first made its appearance in the early part of the spring, and prevailed very generally throughout the northeastern section of the State. No unusual aberration from the ordinary symptoms of the disease was noticed in the epidemic. Its fatality was not great, being confined to infants, whose prospects of life were, aside from the disease, very promising. The fatal complications were pneumonia, hydrocephalus, dysentery and miasmatic fevers. The complicated cases yielded to none of the usual remedies. Late in the epidemic, Dr. B. resorted to the nitric acid

as recommended by Dr. Arnoldi, of Montreal, and, in six cases in which he tried it, it seems to have diminished the severity of the paroxysms and abbreviated the disorder.

The vernal rains in this year in the northeastern section of the State, were not as great as usual, and the summer months were marked by the prevalence of extreme drought. In midsummer, dysentery made its appearance, raging with much severity in a district about ten miles wide along the Mississippi, and extending west from the river about 40 miles. The disease travelled westward from the river, over this circuit. It differed from its predecessor of 1851, by assuming more of a bilio-adynamic type; excessive secretion of vitiated bile with a tendency to early prostration occurred in nearly every case. The disorder advanced insidiously; a few days of languor, malaise, anorexia, thirst, abdominal pain and diarrhœa, ushered in the severer stage; then distinct chill, followed by fever, marked the commencement of the latter. The febrile reaction was not intense, the extremities were cool, the abdomen was hot, the pulse was frequent without development of undue force, and exacerbation of the febrile heat was observable in the evening. Tenesmus and tormina were very distressing; dysuria was frequently their associate. The stomach was very irritable in every case; the alvine dejections presented almost every variety of alvine admixture—they were bilious, sero-bilious, muco-bilious, sanguineo-bilious, and muco-sanguine and bilious; pure mucus with blood alone, or pure blood seldom appeared; the redundant exudation or secretion was vitiated bile. The disorder was a bilious diarrhœa, complicated with colitis. When these dejections had continued from six to eight days, membranous shreds or bands and purulent matter were apparent in the discharges, and in some instances, intestinal entozoa were extruded. Prolapse of the rectum occurred in the young and old subjects; the mortality was greatest in the former class. The fatal cases generally terminated on or after the fourteenth day, rarely before the tenth day. One in every seven subjects died.

Treatment.—The most successful treatment in this epidemic was the mercurial and anodyne combined. Dr. Banks views opium as the most invaluable of these. The effect of these agents, at first, was to produce consistent dejections of vitiated bile, which irritated the rectum intensely, as they were discharged, but which were subsequently followed by diminution of the frequency of the dejections, and of the amount of mucus and blood. Opium, now given in full

doses, controlled the succeeding symptoms; as soon as the acute symptoms were subdued, alcoholic stimuli were resorted to, and the vegetable astringents were now available. In this stage of the disease, Dr. B. derived great advantage from the use of the Beeberine. Blisters were seemingly of no service, until the acute stage was over; the milder counter-irritants, and especially the warm anodyne fomentations, served a better purpose in the earlier stage. The irritability of stomach was best controlled by opium with tris-nitrate of bismuth or with creasote.

Of the endemial epidemics, intermittent and remittent fevers have been the most prevalent in this year. Pneumonia has been common this winter, with a tendency to the ataxic character; bloodletting not being endured nor yet the contra-stimulant action of antimony. Stimulating expectorants and diaphoretics, with calomel and opium, have been the most efficient means of treating it.

REPORT ON THE YEAR 1853.

Prevalent Diseases of St. Louis.

Remarks on the year 1853. *Its mortality, seasons, &c.*

This year is remarkable, from the fact that it is the only one of the four to which our report is confined that is not commemorated by the presence of epidemic cholera. In observing the mortuary reports of the different seasons of this year, it will be noticed that their mortality, and, indeed, the mortality in every month and week of the year, varies greatly from that of the other years, and the maxima of mortality from all causes and from the principal diseases are attained at other times or dates than in the two years previous or in the succeeding year. The ordinary diseases, which prevailed in this year, were uninfluenced by the one great epidemic cause which pervaded the other years, and we find as a consequence that the ratio of mortality and the amount of disease were much diminished. Another point worthy of remark is the character of the meteorologic data in this year, which vary considerably from those of other years. January, October, November and December, present a mean barometrical elevation above the annual mean; March and September are below it. The lowest mean is presented in this as in the preceding year in the month of April. The mean for the year is among the highest recorded in St. Louis in seventeen years, and

is about equal to that of 1838, 1842, and 1845. The mean temperature of 1852 was lower than that of 1853; the temperature of January, 1853, was never down to zero, which is in contrast to the January of the preceding year, one of the coldest months in 21 years. June, 1853, was the warmest of the 12 months of the year, and the warmest June ever experienced in this section of the West. August was the next warmest month; whereas July, which is generally the hottest month of the year, was the coolest July known for many years. July, 1835, 1848 and 1849, presented a similar thermometric state. The highest range of the thermometer in 1853, occurred June 20th and 21st—the degree 100° being only equalled in seventeen preceding years in July, 1833, 1834, 1838, 1841, and in August, 1834. From June 10th and 15th, and again, from the 18th to the 22d, the temperature was extremely warm, being, every day, over 90° F., and for three successive days ranging between 75° at sunrise and 97° post meridian, with light southeasterly, southerly and southwesterly winds, but the air was clear and dry, and no very deleterious effects on the general health were noticed. Only thirteen deaths more occurred in these weeks than in the weeks previous.

Scarlet Fever.—Deaths by scarlet fever were reported in every month in 1852, and the prevalence of the disease, although limited, was greater throughout the year than in any one of several preceding years. It was not until November, however, that it gave any indication of becoming epidemic. The number of cases then increased, and the augmentation was more perceptible in December. The mortality by it amounted to 7 in November and 21 in December; the total for the year being 75.

In January, 1853, a greater dissemination of the disease was noticed, although its mortality was not much increased over that in the preceding month. In February, a marked increase in the number of cases and in their fatality was evident; in March and April the disease was distributed very generally through the city, and the number of deaths augmented over that of the month before. The disease had now reached its climax, and it prevailed with much severity for several weeks. From the current representations of the time, we believe the maximum of prevalence was in March; the greatest mortality by it occurred in the week ending the 28th of that month. In May, an evident reduction in the number attacked was observed, but in June, again, there was an increase, which we estimate as about equal to the amount of the disease in January.

In July, a diminution again prevailed; in August a further reduction took place; and for the remaining period of the year, the disease only manifested its influence by the presentation of occasional cases.

Compared with measles, as prevalent in the previous year, 1852, scarlet fever was, in 1853, more generally distributed than that disease. The number of cases of scarlet fever was greater, for the time this disease existed was longer than that during which measles prevailed, but, independently of this, the number of cases of the former, in each month of its prevalence, was in excess over that of measles. Taking the months of April and May, 1852, when the latter was at its height, to compare with March and April, 1853, when scarlatina was at its maximum, the amount of disease at the former period was the least. The number of mild cases of the former disease was comparatively greater, much greater than that of the latter, yet of the severer cases of the two diseases, we believe that those of scarlet fever that did not die in the forming stage, were, relatively to their number, the more manageable. The liability of different ages to either disease varied in the two epidemics. The infant under two years of age was more subject to measles than to scarlet fever; the former is, within our experience, oftener a disease of the infant subject, since the latter is, relatively, a disease of later years. Throwing out of view the cases of these diseases that occur before the age of two years, we find that, of those occurring after that age, the number of scarlet fever exceeds that of measles. This becomes very evident, if we compare the liability of ages after four years. There are few physicians who have not treated a greater number of cases of scarlet fever in subjects of from 5 to 10 years of age, than of measles, and the greater liability of the ages over ten years to scarlet fever than to measles is very marked. The statistics of mortality that we give of the two diseases, will perhaps show the fallacy or correctness of the above. The deduction we would advance from observation of epidemics of the two diseases, is that scarlet fever is more a disease of the years between the first dentition and puberty, whereas measles may be said to be a disease of the first five years of life. We are indeed inclined to limit still more the tendency of these diseases to attack particular ages, for we might confidently state, that whilst measles is a disease of the second, third and fourth years of life, scarlet fever is more limited to the fourth, fifth, sixth and seventh years, and the period

of the second dentition has, in our opinion, a tendency to increase the liability to this last disease.

In the gravity of the symptoms, this indication of scarlet fever was the severest we have witnessed in St. Louis. The proportion of cases of the simple or mild form being comparatively small. The general character of the disease corresponds with the descriptions given by writers of scarlatina anginosa, and when not fatal in the forming stage, presented an active type. With the exception of the virulent or convulsive form, to which we refer in a subsequent part of this report, the several stages of the disease were well marked and regular in their evolution. The precursory symptoms were displayed on the first and second days, the eruption usually at the end of the second or the beginning of the third day, at first on the face and neck, next on the chest and arms, and then over the body. The efflorescence began to fade on the fifth, and disappeared by the end of the seventh day, when the desquamation proceeded in the regular manner. The anginose symptoms were observable often in the first day; on the second, they became more marked, and continued severe, in cases that recovered, up to the sixth or seventh day. The angina presented the usual local symptoms; sense of pain in deglutition, swelling of the soft palate, palatine arches, uvula, tonsils, and base of the tongue, erythema of the fauces, grayish or yellowish pasty coating over the tongue, with its papillæ elongated and fiery red. The submaxillary and cervical glands were enlarged, the angle of the jaws, the neck and face swollen, the movements of the jaw and neck painful. There was profuse secretion of viscid mucus from the crypta of fauces, and other parts within the mouth, free distillation of acrid fluid from the nares, and, in some cases, exudation of a grayish-white lymph on the tonsils and posterior fauces. Notwithstanding the assertion of authorities to the contrary, we saw cases in which the exudative process extended to the larynx, the patients perishing on the sixth, seventh, and eighth days, with signs of membranous croup. In one case that we witnessed, death resulted from œdema of the glottis. In some cases, the air-passages were involved in the inflammation, the patient perishing from redundancy of secretion in the bronchiæ. Pleurisy was an occasional supervention, but the most frequent complication was meningitis. In the height of the angina and eruption, the fever was intense, the skin was burning and pungent, the pulse rapid and unequal. Increased frequency of the pulse, with heat, dryness, and roughness of the skin, persisted

for several days after the decline of the eruption, and when the general symptoms were subdued. Nocturnal exacerbation of febrile heat, and of nervous lesions, invariably occurred in the height of disease, persisting generally from the second or third to the sixth or seventh day. In some cases, we noticed on the surface a display of minute vesicles, preceding the evolution of the efflorescence. Desquamation of epithelium of the tongue, and other parts within the mouth, was observable on the fourth, fifth, or sixth day; desquamation of the cuticle began on the face about the fifth or sixth day. The frequency of pulse in the precursory and eruptive stages was the principal means of diagnosis; if it became very rapid, the case would prove severe; if the frequency were moderate, and not much increased on the appearance of the eruption, the case would end favorably. A fatal complication in some cases was abscess in the posterior or lateral parts of the fauces or pharynx, which, impinging on the larynx, produced death by apnœa. In one case, which occurred June 6, and in which vesicles preceded the general eruption, the symptoms progressed favorably, and recovery apparently was established. On the fifteenth, there supervened, within a few hours, great tumefaction of the cervical and submaxillary glands; the face became turgid, and, with the neck, œdematous; the fauces were pallid, but not swollen; the pulse was rapid and feeble; the skin cool. The desquamation had been free, the urine was scanty and turbid, and there was distressing orthopnœa. Free purging, with the use of the warm bath and camphorated cataplasms to the chest, subdued the symptoms. We saw no case of gangrenous angina in the disease.

In this epidemic, we noticed a greater proportion of cases fatal in their forming stage than in any epidemic that we have witnessed in St. Louis. This was also observed in the practice of other physicians in the city, from whom we sought information. The subjects would be suddenly attacked without any apparent previous malaise, vomiting being invariably the first symptom. This, occurring without an assignable cause, would create alarm, and induce the calling in of the physician. On examination, the extremities would be found cold; the pulse was unusually small, frequent, and irregular; in some, it might appear of full volume, but compressible and thrilling under slight depression; in all, increased frequency and irregularity were remarkable. Imperfect or disturbed vision presented in many of the cases. The eyes would be dull and heavy; the lids semi-apart; the patient listless; evi-

dently a tendency to coma existed thus early in the disease. The fauces would even now present an erythematous blush, with the tonsils turgid. The tongue was yet unaltered; in a few cases, however, the papillæ were salient, and the fauces erythematized. The face soon became turgid and swollen; in children who could describe their sensations, vertigo and dull pain in the head were noticed. The comatose tendency soon became more manifest, and some delirium occurred; in all, convulsions, more or less violent and prolonged, set in, with deeper coma following. In some, convulsions supervened very soon after the first vomiting. In the interval of the general convulsions, fleeting spasm of the facial muscles, jactitation, and subsultus were noticed. As disease advanced, the brain became more overpowered, paralysis assumed the place of convulsions, the mouth would be drawn to one side, the tongue semi-paralyzed, the power of deglutition lost, and the extremities on either side motionless. Previous to this, the conjunctiva became intensely injected, strabismus, with, at first, vibrating, and finally dilated pupils, occurred; and, in some instances, there was an unequal state of the pupils, one being larger than the other. The first general symptoms in the forming stage of these cases, were analogous to the cold stage of malignant fever, but evidences of an attempt at reaction in time were manifested. The system would seem to struggle, as it were, at reaction. The coldness of the surface would be temporarily succeeded by flushes of heat; these would subside, and alternations of coldness and flushing would recur for one, two, or three hours, when persistent reaction would be established. In the period of these alternations, or rather, as excitement attained ascendency, a limited display of efflorescence would be noticed, generally on the neck and chest, sometimes in the face, or thighs, and arms. This efflorescence, however, would be fleeting; it never fully and permanently appeared in the fatal cases. The system struggled under an attempted evolution of the erythema, but succumbed before it was fully evolved, death ensuing in from 12 to 18 hours from the appearance of the first symptom. The urine, in these cases, was very scanty, or wholly suppressed. The symptoms, in these cases, may have arisen from contact of the scarlatinized or poisoned blood, with the nervous centres; but, in all the cases examined by us, there was the marked tendency of the disease to localize its permanent effects on the neck and throat. The cause producing the angina involved in its operation the tissues adjacent to the fauces and pharynx; the tonsils, submaxillary, and cervical

glands, became tumid and painful to compression; there was pain on moving the lower jaw, which was referred to its articulation and to its muscles; the muscles of the neck were sore and painful on motion; the neck was maintained passive, as though to obviate the pain occasioned by its rotations, or by the flexion of the cervical spine; and there was pain at the back of the head and neck. The local inflammation, at first developed in the throat, involved the spinal theca, and the membranes of the base of the brain. Dr. Weber examined, *post mortem*, some of these fatal cases in which meningitis of the concavity of the brain, extending to the cervical portion of the spine, was developed.

In February, March, and April, we witnessed cases of scarlet fever, in which the fever was regularly periodic, one of them being that of the wife of a physician. February 15, she was taken with distinct chill, followed by febrile reaction, and attended with erythematous angina. On the 16th, the febrile paroxysm was lighter than on the preceding day, and the intermission was distinctly marked. On the 17th, at 12 M., a severe chill, with great pain in the spinal column and extremities, came on, and an erythematous blush suffused the left cheek; the intensity of the cold stage led the physician to administer three grains of opium, to excite reaction, this being a favorite practice with many in the malignant forms of intermittent fever, or in what is properly known as "congestive chills." Reaction was promptly induced by the remedy, the febrile paroxysm was shortened, the nervous lesions, which had been distressing in the first paroxysms, were, in this one, diminished, and the sweating stage was well developed. On the 18th, the febrile reaction was slight; the pulse was very rapid and feeble, a condition often noticed in the adult, after the exhibition of large doses of opium, in these forms of fever; the angina was much complained of, and small patches of efflorescence were distributed over the face. On the 19th, the eruption was diffused in large patches over the chest and arms; the face was more suffused than on the previous day. On the 20th, the eruption faded on the face and extremities, and became thickly spread on the trunk. On the 21st, the general symptoms and the angina were much improved; the pulse was still frequent, 126 per minute; the skin was warm, dry, and harsh; the efflorescence was fading, and desiccation commencing. The increased heat and rapid pulse prevailed until the 24th. This case seemed, in its early stage, to threaten much severity in its anginose and nervous complications; the symptoms were mani-

festly moderated by the opiate given on the 17th; except a mild, saline, diaphoretic mixture, and a gargle of nitrate of silver, no other remedies were given after the opiate. In some patients, the scarlatinous fever was developed in its usual form, and, on the seventh day from its commencement, the fever assumed the periodic type, presenting an aberration sometimes observed in our ordinary intermittent, in children, namely, the absence of a cold stage. Quinine was required for the control of the paroxysmal fever. These intermittent fevers, with scarlatina, occurred at a time when our vernal intermittents were prevailing in subjects not affected by scarlet fever.

Sequelæ.—The most common of these was anasarca. It was frequent, and in many cases severe, the infiltration of serum into the subcutaneous tissues being general, and, in a few instances, the peritoneal cavity shared in it. In connection with scarlatinous dropsy, we may here observe that its occurrence, even after attacks in which the fever has been mild, the eruption regular in its progress, and the angina trivial, may be anticipated where the decline of the eruption is not attended with free secretion of urine, and where, as is always the case, so far as we have observed, there is a large excess of the urate of ammonia in the urine. Close observation of such cases will detect œdema of the face and hands, on the eighth or tenth day, which will become troublesome if not attended to. We know of no disease in which the redundancy of this urate is so marked as in scarlet fever, and none in which it is so important as an indication for remedies. The destructive process that has been going on in the tissues of the surface, and the cessation of the depurative office of the cutaneous emunctories, reflect an undue amount of functional labor on the kidneys; the liability of these organs to inflammatory engorgement is then imminent, and if it be not attended to, the consequence will be a renal dropsy, that may prove severe and obstinate. In some cases under our notice, the presence of albumen in the urine, associated with excess of the urate, was noticed. The cause of the dropsy, or rather its pathology, might have been obscure but for the fact that the state of the urine satisfactorily explained it. Cupping over the loins, the use of the warm bath and purgatives in these cases, soon relieved all disorder. The dropsy more frequently succeeded the decline of mild cases of the fever than the severer cases, which is probably owing to two causes, namely, to the too early careless exposure of subjects that have had mild attacks to vicissitudes of

temperature and humidity, and to the active measures adopted in treating the severer cases, by which latter the tendency to renal engorgement was anticipated, or rather obviated. Chronic tonsillitis was a frequent result of this disease; in many cases it was associated with otitis. In the month of June, we witnessed in many young subjects a succession of furuncles, supervening immediately after the desquamation of scarlet fever.

As to the occurrence of scarlet fever twice in the same subject, we have to remark that it is far less frequently reported than that of rubeola. We have never witnessed such recurrence. Dr. S. G. Moses, of St. Louis, gives us details of two cases occurring under his observation, one of which was in a member of his own family.

Treatment.—Upon this topic we shall be brief, having nothing of interest to communicate. The mild or simple cases of the disease that occurred in this epidemic required no treatment; it was the complications that supervened, constituting the graver form of the disease, that demanded remedies. We have no experience to speak from as to general bleeding. Local depletion, in the height of the anginose symptoms on the third or fourth day, was found to be of avail; if much cerebral excitement existed, it was absolutely required. It is only in the early stage of the complications in this disease, that topical depletion is efficient. If deferred to the 5th or 6th day, it will prove valueless. Emetics were found useful in the forming stage, to facilitate the appearance of the eruption, and, in the later stages, to dislodge the redundant secretions of the throat. Where bronchitis supervened, they were much resorted to. Ipecacuanha was the agent usually preferred. Moderate purgation was in favor in the early stage, and in the more advanced, was directed by the circumstances of the case. After the first purgation and during the height of the eruption and angina, many resorted to repeated alterative doses of calomel, in combination with nauseants, to maintain the action of the cutaneous exhalants and a derivative fluxion by means of the intestines. The objection to the use of repeated mercurial doses, especially in strumous subjects of any age, and in all subjects near the period of the second dentition, is their liability to superinduce stomatitis, which in this form of fever is liable to be fearfully unmanageable, and to terminate in gangrenous destruction of the mouth. Saline cathartics are more eligible as derivatives in the disease than mercurials. Nauseants were found useful to abate excessive vascular excitement. The saline treatment met with favor from some practitioners, the chlorate of

potash, for example, or the acetate of ammonia combined with saline refrigerants, or the neutral draught with small proportions of antimony. Sedative diuretics were combined with other elements, and used as eliminating agents. Sponging the general surface with cold water, while the temperature of the extremities was maintained, found favor with many; others preferred tepid sponging, as less equivocal in its effects. The warm bath was much resorted to in the early stage, to invite the eruption to the surface, and the warm half bath as a derivative and calmative in the more advanced stage. The anginose combinations, when severe, were attacked by local depletion, when mild, by rubefacients and topical emollients. Where the tonsils were much enlarged, decided benefit resulted from scarifying them, an object readily effected in children if the attendant be determined to do it. Solutions or mixtures used simply as gargles were less efficient than when directly applied to the fauces by means of a sponge. The nitrate of silver solution was generally preferred for this purpose. Some practitioners employed the dilute acids, the pyroligneous, or hydrochloric as a topical application to the angina; some mingled chlorate of potash with them, and imagined it was beneficial. Chlorine water had its advocates both as a topical application to the throat and given as an antiseptic, or perhaps as an anti-zymotic. Blisters were employed after depletion to aid in the reduction of cerebral or pulmonic lesions. Applied to the anterior surface of the neck, as was done in few instances, their effects were injurious; intense local serous infiltration followed by gangrene resulted from them. On the decline of the eruption, the warm bath was generally employed to promote desquamation and restore the healthy functions of the skin. The most successful practice was the rational mode of treatment, which prepared the system for the severer stage of the disease, by proper purgation or the use of an emetic in the forming stage, and met the succeeding graver stage and its complications, as they arose, by a judicious and timely employment of topical bleeding and other arterial sedatives, and by derivatives, a course directed by a rational insight as to the disease and its tendencies, that held in view its self-limited character and its tendency to resolution at a stated period of its existence, that anticipated its complications, and, with a rational comprehension of their nature and tendencies, offered the firm hand of Art, without rashness, to aid, but not embarrass, the tottering steps of Nature. The sequelæ of the disease were treated on general principles. In the dropsy, the warm

bath, hydragogue cathartics, diaphoretics, and local depletion from the loins were most beneficial. The rapidly fatal or convulsive cases that we have referred to, were treated in some instances by free topical depletion, revellent baths, purgatives, &c.; in some instances, a milder, expectant course was adopted; stimulants and antispasmodics were likewise tried. Whatever treatment was selected for them, these cases proved hopeless from their inception.

In several cases, we witnessed the effects of the inunction of the surface with bacon. This remedy was applied by the mothers of patients on the first suspicion of the nature of the disease, or as the efflorescence first appeared. Having seen its marvellous effects noticed in medical publications, we patiently watched the progress of these cases. The anginose symptoms were displayed in their incipiency; the precursory fever was well marked, and the disease promised to be at least of moderate severity. The remedy evidently modified the eruption in all the cases, in three it aborted it, causing it to assume a buff color and disappear before the end of twenty-four hours. The anginose symptoms gave but little anxiety as the cases progressed. In five of the subjects, general œdema, particularly observable in the face and hands, occurred on the 6th, 7th or 8th day, which, however, readily subsided under the use of baths and cathartics.

The number of adults attacked by the disease was comparatively large, and in some cases it was severe and fatal. The mortuary table will show this.

Numerous instances have been brought to our notice to show that the fomites of the contagion of scarlet fever pervade premises long after their first localization. The cases quoted, however, are not absolutely conclusive as to this deduction, for, although in four of the most marked and convincing instances the patient was separated from contact with the infected, by sequestration in the country for three weeks, and only were attacked on the fifth day after their return to the house in town, where the previous case had occurred, the prevalence of the disease in the city at the time of their return would account for their infection.

Parotitis was more or less prevalent in this year during the months of February, March and April, confining its attacks chiefly to subjects of from 3 to 15 years of age.

Pertussis was somewhat more prevalent than parotitis, being distributed through the city during May and June. Cases occurred wherein parotitis supervened in the second stage of pertussis, in

subjects who had previously been attacked with scarlet fever. In such cases, delirium set in during the febrile stage of the parotitis, and the patients perished by the superinduction of convulsions. The fatal cases of pertussis, unaccompanied with parotitis, usually terminated by convulsions, these cases being limited to subjects under two and a half years of age.

Scarlet Fever in St. Louis County.—The epidemic which pervaded the city, extended to every precinct of the county. In St. Ferdinand township, which is located between St. Louis township and the Missouri River, the number of cases in April, May and June was great. The general character of the disease in the county was much the same as in the city.

Erythematous Angina accompanying the prevalence of scarlet fever.—An unusual tendency was observed in subjects of all ages towards erythematous angina during the invasion of the scarlet fever epidemic. This was particularly observable in February, March and April. The angina did not confine its attacks to subjects who had been previously unaffected by scarlet fever, nor yet to such as were exposed in the vicinity of cases of that disease. The most numerous cases were in those from 14 to 25 years of age. Its symptoms were usually mild, being erythematous redness of the fauces with but slight tumidity of the tonsils; the follicles of this region were humid, and in a few instances presented exudative action with superficial abrasion, which gave an appearance of ulceration. Pain in deglutition, soreness of the muscles of the neck, some tumidity of the lymphatics beneath the angles of the jaw, with a grayish, pasty coating over the tongue and febricula, constituted the sum of the disease. Mild laxatives, and the application of nitrate of silver solution to the throat, were all that was required in its treatment. Many submitted to its invasion without resorting to medicines. In a few subjects who were predisposed to chronic tonsillitis, it gave rise to acute angina; in some of these laryngeal irritation would be for a time troublesome; in a few the disease was the precursor of severe, acute, or subacute laryngitis, or of true angina membranacea; the latter in some instances was fatal. The mortuary record shows that when scarlet fever prevailed, an increased number of deaths by angina and stomatitis existed.

Mortality.—This is presented in the succeeding tables. In order to compare the concurrent mortality of related diseases, we give, as in the previous year, the following:—

Tabular Statement of the Weekly Mortality from Scarlatina, Angina, Measles, and Pertussis in St. Louis, during the Epidemic of Scarlet Fever, during the year 1853. (The reports conclude with Sunday of each week.)

Week ending	Scarlet fever.	Angina.	Measles.	Pertussis.	Week ending	Scarlet fever.	Angina.	Measles.	Pertussis.
Jan. 9	2	1	...	...	May 8	5	1	...	1
" 16	13	...	...	...	" 15	4	...	...	...
" 23	5	2	...	...	" 22	7	...	...	...
" 30	10	1	...	...	" 29	9	1	...	3
Feb. 6	11	...	2	...	June 5	10	...	1	...
" 13	14	...	...	...	" 12	15	...	...	...
" 20	14	...	...	...	" 19	9	...	...	...
" 27	11	...	1	...	" 26	5	...	...	1
March 6	11	...	...	...	July 3	12	...	...	...
" 13	14	...	...	...	" 10	2	...	...	1
" 20	13	...	...	...	" 17	4	1	...	...
" 27	18	4	...	...	" 24	1	4	...	1
April 3	14	...	...	...	" 31	3	1	...	1
" 10	17	2	...	...	Aug. 7	5	2	2	2
" 17	13	...	...	...	" 14	...	1	...	3
" 24	11	...	...	...	" 21	3	2	...	...
May 1	11	2	1	...	" 28	1	...	1	1

During the remaining months of the year, the mortality by scarlet fever was 16; by angina 1; by measles 0; by pertussis 3. The mortality by parotitis was in February 1; in March 1; in April 1; in the other months of the year 0.

Tabular Statement of the Mortality by Scarlet Fever in St. Louis, 1853.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 1 y'r	3	2	4	1	2	4	4	6	1	..	5	3	..	1	..	1	..	..	..	..	..	..	1	..	20	18	38
1 to 2 y'rs	5	..	5	1	1	2	2	4	..	1	3	5	..	1	2	..	1	..	..	1	..	..	..	1	19	16	35
2 " 3 "	2	3	4	4	6	7	5	6	1	3	3	5	..	2	2	1	2	..	1	..	..	..	..	..	26	31	57
3 " 4 "	1	1	1	9	6	6	2	4	2	2	5	8	1	1	..	1	..	1	..	..	1	..	..	..	18	34	52
4 " 5 "	1	2	5	3	6	4	4	5	4	1	4	..	..	..	1	..	..	..	..	..	2	1	..	..	27	16	43
5 " 6 "	3	..	1	2	1	1	2	3	3	..	2	1	..	..	..	..	..	..	..	..	2	..	..	..	12	9	21
6 " 7 "	..	1	1	1	4	..	..	4	1	1	..	2	..	..	..	1	..	..	..	..	..	..	..	..	6	10	16
7 " 8 "	1	..	3	1	..	..	1	1	1	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	7	4	11
8 " 10 "	..	..	..	1	2	1	2	2	2	..	..	..	1	1	..	..	..	..	..	..	1	..	..	1	8	6	14
10 " 12 "	1	4	1	1	1	..	..	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	4	7	11
12 " 20 "	1	..	..	..	1	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	1	5
Over 20 "	..	..	..	1	4	..	1	..	..	..	2	1	1	1	..	..	..	..	..	..	..	..	..	..	8	3	11
Total	18	13	25	25	34	26	24	37	16	10	26	25	3	7	5	4	3	1	1	1	4	3	1	2	159	155	314

Of those subjects over 20 years of age, the two oldest were 30 and 35 years, respectively.

COMPARISONS OF THE MORTALITY.

	Per cent.
Ratio of deaths by scarlet fever to aggregate mortality of the year . .	8.09
" " " to entire mortality of 5 years of age and under	18.13
" " " in first half of the year to entire mortality of that period	16.13
" " " in first half of the year to entire mortality of 5 years and under	33.94
" " " to population of five years and under . .	1.84
" " " of subjects under 1 year to entire mortality by scarlet fever	12.1
" " " of subjects from 1 to 2 years "	11.11
" " " " " 2 to 3 " "	18.15
" " " " " 3 to 4 " "	16.56
" " " " " 4 to 5 " "	13.69
" " " " " 5 to 10 " "	19.74
" " " " " 10 to 20 " "	5.09
" " " " " 20 to 45 " "	3.50

The above calculations present results of much interest. They show that the mortality by the disease was great, and that it preponderated in subjects from two to four years of age. It would occupy too much space to analyze this mortality and remark on all its interesting relations. Having presented a tabular statement of it, which may be compared with other mortuary tables and with the statistics of population, we shall not pursue the analysis further, but leave it to be followed by the curious student, who may be disposed to the investigation of such matters.

INTESTINAL DISEASES.

DIARRHŒA, DYSENTERY and CHOLERA INFANTUM prevailed in this year to an extent much reduced below that of the two previous years. This is attributable to several causes, the most prominent among which was the entire absence of epidemic cholera, and the comparatively mild temperature of the month of July, together with the relative dryness of the summer season. The influence of these meteorologic causes in disease is the subject of remark in the interesting paper by Dr. Engelman, which will be found at the end of this report. The decrease of intestinal disease in this year is, in a measure, apparent in the weekly mortuary reports, which we shall attach to our report. We therefore confine ourselves to their publication, deeming it sufficient for what we have in view as to our present topic. The limits to which this report has already

extended, admonishes us to be as brief as possible; we shall therefore avoid, as much as we can, disquisition upon the topics we introduce. We may remark, before quitting our present topic, that, while the chief prevalence of diarrhœa, dysentery, and, of course, cholera infantum was in the months of April, May, June, July, August and September, the greatest mortality by diarrhœa occurred in September, October, November and December. The prevailing character of the disease in these last months may be inferred from the fact that of one hundred fatal cases, the deaths in 52 instances are reported in the Sexton's certificates as from chronic diarrhœa. Another fact of interest, which obtains also of other years, is that the mortality during the summer is made up of young subjects, whereas that of autumn and winter shows the deaths to have been principally among adults.

CHOLERA MORBUS.—To show the immunity from cholera that this year presented, we subjoin the report of deaths, stated in the mortuary registry of the city in the different months.

January. 1 male of 36 years, German; 1 female, 44 years, German; 1 female, 50 years, English; 1 male, 16 years, English; 1 male, 32 years, German; 1 female, 42 years, German; 1 male, 36 years, nativity not stated. Total, 7.

June. 1 male, 21 years, German.

July. 1 male, 5 years; 1 female, 16 years, German; 1 male, 3 years and 9 months. Total, 3.

August. 1 male, 60 years, German; 1 male, 32 years; 1 male, 36 years, Irish; 1 female, 65 years, Irish; 1 male, 39 years, German. Total, 5.

October. 1 female, 20 years, Irish; 1 female, 58 years. Total, 2.

November. 1 female, 30 years.

December. 1 female, 16 years, German; 1 male, 20 years, German; 1 male, 11 years, Irish; 1 male, 21 years, Irish; 1 male, 42 years; 1 male, 52 years; 1 male, 36 years, Irish; 1 female, 11 years; 1 male, 45 years, Irish. Total, 9.

Aggregate of the year, 28.

Those in June, July and August are reported under the head of cholera morbus; the others under that of cholera. The cases in January were the remnant of the cholera visitation of the preceding year; those in December, the *avant-couriers* of the attack of the succeeding year.

Tabular Statement of the Monthly Mortality by Diarrhœa in St. Louis, in 1853.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1 year and under	1	..	..	..	1	..	2	..	..	..	2	2	4	2	..	4	1	..	1	2	..	1	..	..	12	11	23
1 to 2 yr's	..	1	..	..	..	..	..	..	..	..	2	2	2	2	..	1	2	3	3	1	..	..	1	..	10	10	20
2 " 3 "	..	1	..	..	..	1	1	1	..	..	2	2	..	1	1	..	1	..	..	..	..	..	..	2	5	8	13
3 " 5 "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1
5 " 10 "	..	1	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	1	..	..	1	1	..	4	3	7
10 " 20 "	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	2	..	2	..	1	..	3	..	8	1	9
20 " 30 "	4	..	2	..	1	..	1	1	4	..	1	1	..	1	2	2	7	..	4	1	7	..	1	3	34	9	43
30 " 40 "	1	..	..	..	..	..	..	..	..	..	2	..	1	..	1	..	5	1	4	..	7	1	2	..	21	4	25
40 " 50 "	..	..	..	..	..	..	1	..	..	..	1	..	1	..	1	..	4	2	2	..	4	..	..	1	14	3	17
50 and over	1	..	..	..	2	..	..	..	..	..	..	..	1	..	..	..	1	1	4	..	5	..	2	..	16	1	17
Total	7	3	2	..	4	1	6	3	4	1	10	7	9	6	5	7	24	7	22	4	24	3	10	6	125	50	175

Tabular Statement of the Monthly Mortality by Dysentery in St. Louis, in 1853.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1 year and under	..	1	..	1	..	1	..	1	1	..	4	4	4	4	2	2	4	1	1	4	2	1	..	..	18	20	38
1 to 2 yrs.	..	2	..	3	..	..	..	..	1	2	2	2	2	2	4	3	6	4	5	2	..	..	2	2	22	22	44
2 " 3 "	1	1	..	..	1	..	..	1	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	3	3	6
3 " 5 "	..	..	..	..	..	..	..	..	1	1	1	..	..	..	1	1	1	..	2	..	..	1	..	1	6	4	10
5 " 10 "	..	1	..	..	..	..	..	1	..	..	..	..	1	..	..	..	2	..	1	..	..	..	..	1	5	2	7
10 " 20 "	..	..	..	..	..	..	..	1	..	..	..	2	1	..	..	..	1	..	..	..	1	..	1	..	4	3	7
20 " 30 "	1	..	..	1	1	..	..	2	..	2	..	1	2	..	3	..	4	1	1	2	1	1	..	..	15	9	24
30 " 40 "	..	1	..	..	..	..	1	..	1	..	1	..	1	1	3	1	5	1	2	2	1	..	..	1	15	7	22
40 " 50 "	..	..	2	..	..	..	1	..	..	..	..	..	1	..	..	..	1	..	..	..	1	..	..	..	6	..	6
50 and over	..	..	..	..	..	..	..	2	2	..	..	1	..	..	..	..	4	..	1	1	..	1	..	..	7	5	12
Unknown	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	2	1	3
Total	2	6	2	5	2	1	3	7	7	5	8	10	12	9	13	7	29	7	13	10	7	4	5	5	103	76	179

ANALYSIS OF THE MORTALITY BY DIARRHŒA.

	Per cent.
Ratio of mortality to aggregate annual mortality	4.5
" " " population	0.14
" " of subjects 5 years and under to aggregate annual mortality of that age	2.9
" " " " " to population "	0.33
" " " 5 to 10 years " "	0.05
" " " 10 to 20 " " "	0.04
" " of adult subjects to adult population	0.14

Assuming the same distribution of mortality between 40 and 50 years, as above in the instance of dysentery, we have

	Per cent.
Ratio of mortality of subjects of 20 to 45 years to population of same age	0.12
" " " of 45 years and over " "	0.37

ANALYSIS OF THE MORTALITY BY DYSENTERY.

	Per cent.
Ratio of mortality to aggregate mortality of the year	4.6
" " " population	0.15
" " of subjects 5 years and under, to aggregate mortality of the year at same age	4.99
" " of subjects 5 years and under, to population of same age	0.57
" " " 5 to 10 years " "	0.05
" " " 10 to 20 " " "	0.03
" " of adults to adult population " "	0.09

Assuming the mortality between 40 and 50 years of age to have been equally divided between 40 and 45, and 45 and 50 years, we have the following result:—

	Per cent.
Ratio of mortality of subjects of 20 to 45 years, to population of same age	0.07
" " " over 45 years " "	0.22

From the above it appears that, while dysentery is relatively more fatal in the early periods of life, diarrhœa, in comparison with dysentery, is more fatal at the later periods. The comparative reduction in the mortality by dysentery and diarrhœa in this year is seen, if we refer to the report of the previous year.

CHOLERA INFANTUM.—The reduced prevalence of this disease in this year was very marked, as might be readily inferred from the climatic circumstances of the summer. The following is its mortality:—

AGES.	MAY.		JUNE.		JULY.		AUGUST.		SEPTEMBER.		TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 1 year.	1	1	13	...	18	10	8	6	4	3	64
1 to 2 years.	1	...	3	4	9	8	15	11	10	9	69
Over 2 "	...	...	1	1	2	...	1	1	1	1	8

The above total mortality, 141, is 3.62 per cent. of the entire mortality of the year, and 7.13 per cent. of the entire annual mortality of subjects under five years of age. Taking the mortality of the five months included in the above series, we find the disease 7.59 per cent. of the aggregate mortality of this period, and 13.94 per cent. of the mortality of subjects under 5 years of age. It would be interesting to detail the varying ratio of mortality by this and other diseases in each month of the year, and thus pointedly indicate the influence of meteorologic circumstances, or their changes, on the fatality of different diseases. This we shall attempt

at the end of our report, if there be sufficient time to elaborate the matter before we close it.

Summer Mortality in young Subjects from Causes not yet enumerated.

To present this topic in a complete form, we present the following table, showing the principal causes of this mortality in every week of six months of the year. It will enable the reader to trace out the influence of meteorologic changes in the mortality, as we shall give on another page the weekly meteorologic tables for the same months. It will be of interest to compare this table with the corresponding one in the subsequent year, a year strongly contrasted in its summer climatic circumstances with the present.

Statement of the Weekly Mortality during six months of 1853, *of subjects under five years of age, by the principal Infantile Diseases.*

Week ending	Weekly aggregate under 5 years.	Diarrhœa.	Dysentery.	Cholera infantum.	Marasmus.	Dentitional irritation.	Cerebro-spinal diseases.	Eruptive fever.	Acute respiratory diseases.	Consumption.
April 3	30	1	...	...	3	1	5	9	3	...
" 10	29	...	1	...	1	...	4	15	4	...
" 17	34	1	...	...	1	...	8	13	4	1
" 24	24	...	...	1	1	1	6	5	...	1
May 1	35	3	...	...	...	...	5	9	1	4
" 3	43	...	1	...	...	1	8	4	1	1
" 15	21	...	...	1	1	1	2	2	2	1
" 23	31	...	5	1	1	1	2	6	...	1
" 30	27	...	...	1	2	1	6	7	1	...
June 5	36	...	2	3	3	...	5	12	2	1
" 12	45	2	2	2	4	1	7	14	...	...
" 19	51	5	4	6	1	4	8	6	...	...
" 26	53	4	1	7	2	2	15	5	...	...
July 3	56	1	4	14	1	3	6	10	2	1
" 10	64	4	8	15	1	4	11	...	...	...
" 17	51	4	2	7	2	4	15	3	...	...
" 24	42	...	1	7	5	2	11	1	1	...
" 31	57	3	2	9	3	5	13	3	...	...
Aug. 7	56	2	3	9	7	2	7	6	...	...
" 14	66	1	5	12	4	7	15	...	1	2
" 21	63	1	4	13	1	2	14	...	1	4
" 28	47	2	2	8	5	5	8	1	...	...
Sept. 4	53	2	1	6	4	6	9	...	...	...
" 11	44	2	2	9	3	1	9	2	...	1
" 18	34	2	4	6	1	...	5	2	...	...
" 25	30	...	4	3	4	3	10	1	...	...
Oct. 2	43	3	4	1	4	5	6	...	...	1

Table showing the Mortality of Subjects of five years and under, from Congestion and Inflammation of the Brain (Convulsions, Meningitis, Hydrocephalus), in St. Louis, in 1853.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 1 yr.	4	3	12	5	6	6	4	7	1	3	15	13	16	13	20	6	16	9	19	6	10	6	7	5	130	82	212
1 to 2 yrs.	..	3	1	3	..	9	3	3	2	4	4	4	8	7	5	3	5	4	3	1	2	2	1	1	34	44	78
2 " 3 "	2	2	2	1	2	2	..	..	1	..	4	1	..	2	1	3	6	1	2	3	..	..	2	..	22	15	37
3 " 4 "	..	2	2	1	1	2	..	1	..	1	..	..	1	..	1	1	1	1	..	1	1	..	..	1	7	11	18
4 " 5 "	..	..	..	2	..	..	2	1	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	3	4	7
5 " 10 "	1	1	1	1	1	..	1	3	4	1	4	..	..	1	2	1	1	2	1	..	2	1	1	..	19	11	30
Total	7	11	18	13	10	19	10	15	8	10	27	18	25	23	29	14	29	16	25	11	16	9	11	7	215	167	382

FEVERS, CONTINUED AND PERIODIC.

We have already stated, in reference to this year, that it is the only one of the four years included in our report that is not marked by the prevalence of epidemic cholera in our State. The influence of the "cholera cause" upon the health of the population in the city, is very apparent if we compare the mortality of these several years, and especially the mortality by endemic fevers.

TYPHOID and TYPHUS FEVERS prevailed during the year, in a reduced degree compared with the two preceding years. They occurred among the same classes of population, and with the same variations as to season as observed in those years. Their chief period of prevalence is in the autumn and winter months; the time of their greatest fatality in this year, is reported to be July, August, and September, but we believe the maximum enumeration is made up by a portion of the mortality by endemic periodic fevers being included in the mortuary reports under the title typhoid fevers.

The PERIODIC FEVERS prevailed in an increased degree this year during July, August, September, and October. In the early period of this series of months, the remittent form predominated, as it does usually in midsummer. Towards the conclusion of August, and during the autumn, that form was superseded by the intermittent. The principal localities of the latter were the suburban portions of the city, especially the northern section and the vicinity of Chouteau's Lake.* The inception of fever, in the last named-locality,

* The locality of this lake is delineated in the small map found in Dr. Drake's work on the diseases of the interior valley of N. America. For a description of it, we must refer our readers to that work.

was more extensive than had before been experienced there, scarcely a house in the vicinity escaping the visitation. The cause of this was, evidently, the drainage of the lake in the early part of the season, a measure which had been attempted in the preceding year, but was suspended by the popular outcry raised against it. So long as the lake was fully inundated during the summer and autumn months, the banks around the deeper portions were comparatively little visited by fevers; its western extension near and beyond the city limits, which was shallow, was however annually subjected to intermittent and remittent. In this year the evil effects of exposing its entire bottom, were notably manifested. The outlet of the lake, which had been previously dammed, was now kept open so as not to accumulate a great depth of water, and its entire bed became a temporary shallow receiver of the rains of June, July, and August. This moist pit, the bottom of which is alluvion, composed largely of organic matter, under the fostering heat of summer became covered with rank vegetation, nurtured by the mistaken wisdom, which, in its efforts to reclaim the land from inundation, so directed circumstances that the exact irrigation required for a luxuriant crop of moist vegetable growth was attained to a nicety. No amateur scientific gardening or agricultural chemistry could have effected more for the anxious husbandman, than this drainage of the lake accomplished for the physician. The vicinity became literally the hotbed of fever. The mansion of the proprietor of the land on the banks of the lake, which for thirteen years preceding had been noted for its immunity from fever, became uninhabitable, nearly the entire family being attacked with malarious fever. In other houses in the neighborhood, the same effects resulted. We had, with other physicians, the opportunity of remarking the effects of the drainage, and of comparing its influence on the health of the locality in contrast to previous years, when the bottom of the lake was fully submerged. There was but one opinion entertained when these circumstances were fresh upon the minds of observers, namely, that the bed of the lake, entirely inundated or completely reclaimed from water in the summer and autumn months, was little obnoxious to the charge of being a source of febrile miasmata, compared with the irrigated state in the summer of 1853. The effect of thorough drainage and desiccation of its surface by intense solar heat, in a year of excessive drought, was manifested in the succeeding year, 1854, during the

summer and autumn of which but little miasmatic fever was observed in this or other localities of the city.

YELLOW FEVER.—It is to be noted that cases of yellow fever, originating in the city, were reported in this year, during August and September, at the time the fever prevailed extensively and fatally in New Orleans. In every year of an epidemic of the fever in the South, deaths by it are reported in the mortuary tables of St. Louis, these being of subjects attacked in the steamboats on their way up the Mississippi, and interred in the cemeteries here. The cases to which we refer in this year, however, were of residents who had not been out of the city for some time previous to being attacked. They presented the same symptoms and pathology as are noticed of the disease in the South. The causation of these local cases was the subject of discussion in the Medical Society of St. Louis at the time of their occurrence, but nothing satisfactory upon the topic was elicited; the one fact was proved, namely, that they were true cases of yellow fever, originating in the city. The cases reported to the Medical Society, were two by Drs. Barnes and Christopher at the Society meeting, Sept. 2d; both had black vomit. On Monday, Sept. 4, Dr. Linton reported two cases in his practice, both with black vomit and yellowness of surface. At the meeting of the Society, September 24th, Dr. A. Marshall reported one case, Dr. McPheeters another, Dr. Boislinière another, the last, a remittent fever, supervening one week after the suspension of intermittent fever, and terminating with yellow skin and adnata and black vomit. Dr. G. Engelman reported two cases, the subjects of which had primarily labored under tertian intermittent, and, a week after, were attacked with bloody discharges, and died comatose. Dr. Linton related an additional case presented in his practice, at the meeting of October 1st. Dr. Papin reported a case commencing as intermittent, and terminating with black vomit. These are the only details that we can obtain of cases originating in the city, though from notes on the subject, recorded at that time, we believe the entire number of cases originating in the city was reported by different physicians to be thirteen. The other cases reported in the mortuary lists, were of subjects in whom the disease originated on the Lower Mississippi, and who were brought here for interment.

Mortality by Continued and Periodic Fevers.—This is presented in the following tables:—

Tabular Statement of the Monthly Mortality by Typhus Fever in St. Louis, in 1853.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
5 years and under	1	1	..	..	..	1	..	..	..	..	..	1	..	1	..	1	..	..	..	1	..	..	..	..	1	6	7
5 to 10 yrs.	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	1	2
10 " 20 "	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	2	..	1	..	..	..	..	2	3	5
20 " 30 "	..	1	..	..	2	1	2	1	..	..	..	..	1	..	..	..	2	..	..	..	2	..	..	..	9	3	12
30 " 40 "	..	1	..	1	1	..	1	..	..	..	..	..	1	..	..	1	2	..	2	1	..	..	..	1	7	5	12
40 " 50 "	..	..	..	..	2	1	1	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	6	1	7
50 " 60 "	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	2	2	4
60 and over	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1
Total	2	3	..	1	5	4	5	1	1	..	..	1	4	1	3	2	4	3	3	4	2	..	..	1	29	21	50

Younger subjects above reported, 1 of one year and 8 months; 1 of 2 years; 1 of 3 years; 3 between 3 and 4 years.

Statement of the Mortality by Typhoid Fever in St. Louis, in 1853.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
5 years and under	3	1	..	1	..	2	..	1	..	..	..	..	..	..	1	1	..	..	..	2	..	..	1	..	5	8	13
5 to 10 yrs.	1	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	3	4
10 " 20 "	..	..	1	..	..	..	..	..	..	..	..	..	..	1	1	2	3	1	1	2	..	..	..	..	6	6	12
20 " 30 "	2	..	..	3	..	..	2	..	4	1	1	..	6	1	2	3	6	1	6	..	2	2	3	2	34	13	47
30 " 40 "	..	..	1	1	1	..	..	1	1	1	2	..	..	1	1	1	7	..	2	..	..	..	1	..	16	5	21
40 " 50 "	1	..	1	..	1	..	..	..	..	..	..	..	5	..	2	..	4	1	1	1	1	..	..	..	16	2	18
50 " 60 "	..	..	..	..	1	..	..	1	..	..	..	..	2	..	..	..	1	..	1	2	..	..	2	..	7	3	10
60 and over	..	..	..	..	..	..	1	..	..	..	..	..	..	1	2	..	..	..	1	..	..	..	..	..	4	1	5
Adults, age unknown	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	4	..	1	..	..	..	5	..	5
Total	7	2	3	5	3	3	3	3	5	2	3	..	13	4	9	7	21	3	16	7	4	3	7	2	94	41	135

Youngest subjects above reported, 1 of 1 year and 3 months; 1 of 2 years; 3 of 2½ years.

Table of the Mortality by Bilious Fever in St. Louis, in 1853.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
5 years and under	..	..	..	..	..	..	..	..	..	1	..	..	1	1	2	..	3	..	..	1	2	1	..	..	8	4	12
5 to 10 yrs	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	2	1	..	1	1	..	..	..	6	2	8
10 " 20 "	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	2	2	..	1	..	..	..	..	4	5	9
20 " 30 "	..	..	..	..	..	..	..	..	..	..	1	..	2	1	1	..	11	3	2	..	..	..	..	1	17	5	22
30 " 50 "	..	..	..	..	..	..	1	1	..	2	1	..	..	2	3	..	9	5	1	1	..	1	..	1	15	13	28
50 and over	..	..	..	..	1	..	..	..	..	..	1	..	1	..	1	2	3	4	2	..	..	..	..	..	9	6	15
Total	1	..	..	..	1	..	1	1	..	3	4	..	5	5	9	3	30	15	5	4	3	2	..	2	59	35	94

Table of the Mortality by Intermittent Fever in St. Louis, in 1853.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
5 years and under	..	..	..	..	..	..	..	1	..	..	1	1	..	..	1	2	..	2	1	3	..	..	1	1	4	10	14
5 to 10 yrs.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	1	1	2
10 " 20 "	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
20 " 30 "	..	..	1	..	..	..	1	1	1	..	..	..	2	..	2	..	8	..	2	..	..	..	2	..	19	1	20
30 " 50 "	..	..	..	..	..	..	1	..	..	..	..	..	1	..	3	1	..	1	2	..	..	..	1	..	8	2	10
50 and over	..	..	..	..	..	..	..	..	..	1	..	..	..	2	..	..	..	1	3	2	..	..	..	..	3	6	9
	..	..	1	..	..	..	2	2	1	1	2	1	3	2	6	3	9	5	8	5	..	..	4	1	36	20	56
																											2
																											58

Age and sex unknown

Total

Table of the reported Mortality by "Congestive Fever" in St. Louis, in 1853.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
5 years and under	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	1	..	..	..	..	..	..	..	4	4
5 to 10 yrs.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	3	3
10 " 20 "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	..	..	..	..	..	1	2	3
20 " 30 "	..	..	1	..	..	1	..	..	..	1	..	..	3	1	..	..	5	1	..	..	..	..	..	..	9	4	13
30 " 50 "	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	1	2	1	..	..	..	..	1	..	5	2	7
50 and over	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	3	..	3
Total	1	..	1	..	..	1	..	..	..	1	2	..	3	1	1	5	9	6	..	1	..	..	1	..	18	15	33

Nativity of the Subjects dying by Bilious Fever.—Germans, 31; Irish, 31; not stated, 23; Italian, 1; English, 3; French, 1; Swiss, 3.

Youngest Subjects dying of Bilious Fever.—1 male, of seven months, in July; 1 female, of eleven months, in July; 1 male, of eleven months, in September; 1 male, of one year, in September; 1 French male, of one year, in August; 1 male, of one year one month, in September; 1 Swiss female, of one year one month, in May. Oldest subject, 1 Irish male, of ninety years, in July.

Nativity of Subjects dying of Intermittent Fever.—Irish, 21; Germans, 10; English, 2; not stated, 23; Negroes, 2.

Youngest Subjects dying of Intermittent.—Female, of three months, in September; female, of three months, in October; female, of six months, in October; female, of seven months, in October. Oldest subjects dying, 2 males, of seventy-one and seventy-two respectively; 1 female, of seventy-three years, all in October.

Nativity of Subjects dying of Congestive Fever.—Irish, 13; Germans, 5; Welsh, 1; not stated, 14.

Youngest Subjects dying of Congestive Fever.—1 female, of two

years, in September; 1 female, two years and one month, in June. Oldest subject, 1 male, in January.

REPORT OF THE WEEKLY INTERMENTS OF YELLOW FEVER IN ST. LOUIS, 1853.

Week ending				Total.
July 29	Female of 20 years of age			1
Aug. 7	Male " 50 " "	F. of 51, M. of 35,		3
" 14	" " 35 " "	F. " 18, F. " 24,		3
" 28	" " 24 " "	M. " 42, M. " 52,		3
Sept. 4	" " 34 " "	M. " 29, M. " 22, M. of 19	}	5
	" " 21 " "			
" 11	" " 54 " "	M. " 28, M. " 30, M. " 59	}	6
	" " 28 " "	M. " 24.		
" 18	" " 28 " "	M. " 21, M. " 44, M. " 28	}	9
	" " 33 " "	M. " 26, M. " 42, M. " 30		
	" " 24 " "			
" 25	" " 26 " "			1
Oct. 2	" " 24 " "			1
				32

Nativity of above.—Irish, 10; Germans, 9; English, 2; Canadian, 1; Slave, 1; not stated, 10.

Diseases in the State beyond the limits of St. Louis County.

The communications we received from distant counties in this year, relating to the prevalent diseases, are brief, and barren of interest. One fact is prominently set forth in all, namely, the unusually extensive prevalence of climatic fevers, the remittent and intermittent. The one cause is usually brought forward to account for this, namely, the prevalence of late vernal and summer rains. We were impressed, on reading these communications, with the proofs they afforded of the correctness of the views advanced by Dr. Engelman, of St. Louis, in the paper on the Meteorologic Causes of our Climatic Fevers, which we append to this report.

Typhoid fever raged for several weeks in December, 1852, and January, 1853, in Jackson, Cape Girardeau County and its neighborhood, the locality which had been so scourged with cholera in the preceding summer.

We shall dismiss this portion of our subject with the above general statement, to take up the report on the prevalent diseases of 1854, and close our general report with that year.

Weekly Meteorological Table for St. Louis, from April 1 *to October* 2, 1853. From observations by GEORGE ENGELMAN, M. D.

1853. WEEK FROM	BAROMETER—CORRECTED FOR TEMPERATURE. IN ENGLISH MEASURE.						
	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Lowest.	Highest.
Mar. 28 to April 3	29.409	29.427	29.352	29.361	29.387	28.970	29.651
April 4 to " 10	29.460	29.471	29.424	29.488	29.461	29.095	29.776
" 11 to " 17	29.475	29.481	29.409	29.442	29.452	29.102	29.751
" 18 to " 24	29.262	29.272	29.204	29.268	29.251	28.960	29.639
" 25 to May 1	29.492	29.505	29.451	29.324	29.443	29.278	29.651
May 2 to " 8	29.294	29.317	29.274	29.276	29.290	29.025	29.481
" 9 to " 15	29.445	29.470	29.430	29.450	29.449	29.193	29.638
" 16 to " 22	29.511	29.514	29.456	29.483	29.491	29.101	29.897
" 23 to " 29	29.542	29.553	29.499	29.510	29.526	29.213	29.688
" 30 to June 5	29.432	29.453	29.404	29.434	29.431	29.250	29.567
June 6 to " 12	29.500	29.522	29.478	29.496	29.499	29.355	29.620
" 13 to " 19	29.516	29.542	29.465	29.471	29.498	29.353	29.678
" 20 to " 26	29.490	29.502	29.433	29.447	29.468	29.194	29.714
" 27 to July 3	29.410	29.436	29.352	29.395	29.398	29.217	29.489
July 4 to " 10	29.535	29.551	29.480	29.510	29.519	29.386	29.616
" 11 to " 17	29.488	29.501	29.437	29.461	29.472	29.342	29.586
" 18 to " 24	29.468	29.469	29.432	29.447	29.454	29.260	29.562
" 25 to " 31	29.525	29.554	29.503	29.523	29.526	29.325	29.620
Aug. 1 to Aug. 7	29.397	29.410	29.366	29.389	29.390	29.268	29.523
" 8 to " 14	29.473	29.490	29.427	29.436	29.456	29.345	29.549
" 15 to " 21	29.374	29.381	29.327	29.357	29.360	29.273	29.424
" 22 to " 28	29.513	29.534	29.484	29.507	29.509	29.340	29.735
" 29 to Sept. 4	29.468	29.475	29.398	29.420	29.440	29.304	29.612
Sept. 5 to " 11	29.532	29.551	29.499	29.536	29.529	29.362	29.667
" 12 to " 18	29.328	29.306	29.272	29.301	29.302	29.140	29.693
" 19 to " 25	29.573	29.598	29.537	29.557	29.566	29.440	29.704
" 26 to Oct. 2	29.555	29.571	29.516	29.540	29.545	29.408	29.669

Weekly Meteorological Table for St. Louis—Continued.

1853. WEEK FROM	OPEN AIR THERMOMETER. FAHRENHEIT.							CLEARNESS OF SKY.					NO. OF DAYS.		
	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Lowest.	Highest.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Fair.	Variable.	Overclouded.
Mar. 28 to April 3	44.5	50.9	62.7	51.1	52.3	31.5	81.0	5.4	4.0	3.9	5.7	4.7	3	2	2
April 4 to " 10	42.1	52.2	65.2	50.6	52.5	37.0	77.0	7.7	9.6	6.9	7.4	7.9	4	3	
" 11 to " 17	48.6	56.1	66.4	54.1	56.3	37.5	77.0	3.6	3.6	3.4	3.9	3.6	1	5	1
" 18 to " 24	54.1	65.4	70.7	54.4	61.1	42.0	81.5	6.3	6.7	5.4	3.3	5.4	2	5	
" 25 to May 1	50.0	61.8	70.9	59.0	60.4	39.0	82.0	4.7	4.1	4.3	4.1	4.3	2	5	
May 2 to " 8	54.9	60.2	66.3	57.6	59.7	46.0	71.0	2.7	1.6	2.1	3.4	2.4	1	4	2
" 9 to " 15	51.9	63.1	72.1	59.1	61.5	41.0	86.0	5.4	6.1	6.9	6.7	6.3	4	3	
" 16 to " 22	57.4	71.4	77.4	61.5	66.9	43.0	91.0	8.0	6.4	7.1	6.1	6.9	3	4	
" 23 to " 29	51.7	67.0	75.1	60.7	63.6	47.0	83.0	6.3	7.6	5.6	8.6	7.0	3	4	
" 30 to June 5	65.7	78.4	86.4	69.3	74.9	62.0	92.0	7.3	7.9	7.9	8.0	7.8	3	4	
June 6 to " 12	64.4	79.4	85.4	71.2	75.1	54.0	94.5	8.1	7.9	6.4	9.0	7.8	4	3	
" 13 to " 19	68.6	83.6	91.2	76.1	79.9	62.5	96.0	9.9	9.3	8.4	9.9	9.4	6	1	
" 20 to " 26	67.9	80.4	87.1	72.2	76.9	55.5	97.0	8.0	7.9	7.4	7.9	7.8	4	3	
" 27 to July 3	73.1	84.1	89.0	78.4	81.1	71.5	95.0	5.9	7.6	6.3	7.3	6.8	3	4	
July 4 to " 10	70.1	81.6	89.3	76.6	79.4	66.0	95.0	6.6	8.3	8.1	8.1	7.8	5	2	
" 11 to " 17	68.5	73.9	83.5	74.1	75.0	62.0	93.0	5.1	4.9	6.9	7.7	6.1	2	5	
" 18 to " 24	66.6	75.6	81.8	71.4	73.8	59.5	86.0	4.6	5.1	4.9	3.9	4.6	3	4	
" 25 to " 31	61.4	72.9	78.6	68.4	70.3	56.0	85.0	6.0	5.4	6.9	7.0	6.3	2	5	
Aug. 1 to Aug. 7	69.4	78.9	84.4	74.6	76.8	66.5	90.0	4.4	6.4	4.4	7.7	5.7	3	4	
" 8 to " 14	74.9	85.4	91.6	80.5	83.1	70.0	95.0	9.3	9.3	7.1	7.1	8.2	5	2	
" 15 to " 21	69.1	75.3	83.3	73.4	75.3	59.0	90.0	6.3	5.3	6.0	6.0	5.9	3	3	1
" 22 to " 28	63.4	69.9	77.1	67.4	69.4	53.0	85.0	6.3	5.4	6.4	7.1	6.3	4	3	
" 29 to Sept. 4	66.9	77.6	87.1	73.6	76.1	53.0	90.0	6.9	7.9	7.9	9.3	8.0	4	3	
Sept. 5 to " 11	64.8	70.4	79.1	68.6	70.7	58.0	86.0	6.3	7.3	7.7	5.7	6.7	4	3	
" 12 to " 18	68.5	77.4	82.9	73.0	75.4	62.0	89.5	7.0	5.9	3.9	6.4	5.8	2	5	
" 19 to " 25	52.2	62.3	73.6	58.9	61.7	42.0	82.0	8.6	8.4	9.0	10.0	9.0	5	2	
" 26 to Oct. 2	57.1	62.5	68.4	60.4	62.1	46.5	81.0	4.3	4.4	3.9	5.6	4.5	3	1	3

Weekly Meteorological Table for St. Louis—Continued.

1852. WEEK FROM	RAIN. Days.	RAIN. Hours.	RAIN. Quantity.	THUNDER-STORMS.	WINDS DURING WEEK.[1]
Mar. 28 to April 3	2	8½	0.72	2	S. 2 3, S.W. 2, N.W. 2 3, N.E. 2, N.W. 3.
April 3 to " 10				1	N.W. 3, S.W. 3, W. 4 3 2, S.E. 3, N.W. 2, N.E. 2.
" 11 to " 17	3	21	0.57	2	N.E. 2, S.E. 2, S.W. 2, N.E. 3, N.W. 2, W. 3.
" 18 to " 24	3	5¾	1.23	3	S.E. 3, N.W. 2, N.E. 2, S.E. 2 4, W. 2, S.E. 3, W. 3.
" 25 to May 1	1	4	0.72	2	N.W. 3 2, S.E. 2, W. 2, N.E. 2, S.E. 2.
May 2 to " 8	4	43½	3.47	1	S.E. 2, N.E. 3, E. 2, W. 3, N. 2, W. 2 3.
" 9 to " 15	1	1	0.07	1	W. 2 3, S. 4, N.E. 3 2, S.E. 2, S. 3.
" 16 to " 22	1	¼	0.03	1	S.E. 3, S.W. 3, W. 4, N.W. 3, S.W. 2, S. 2.
" 23 to " 29	1	¾	0.07	1	N.W. 3, N.E. 2, W. 2, S.W. 2, S. 4 2.
" 30 to June 5	2	4	0.71	3	N.W. 2, E. 2, S.E. 2, S.W. 2, S.E. 2, S. 3 2.
June 6 to " 12	1	¼	0.01	2	S.W. 2 3, N.W. 3, S.E. 2, S.W. 3 2, S.E. 2.
" 13 to " 19					S.E. 2, S.W. 3, W. 3, N.W. 3, S.E. 2, S. 2.
" 20 to " 26	1	8	2.36	1	S. 2 3, S.W. 4, W. 3 2, S.E. 2.
" 27 to July 3	2	1½	0.20	2	S.W. 3 2, S. 3, S.W. 2, N.E. 2, S.E. 2 3, N.E. 2.
July 4 to " 10	1	½	0.29	1	N.E. 2, N.W. 3, N.E. 2, S.E. 2, N.W. 2, S.W. 2.
" 11 to " 17	1	9	2.08	1	N.E. 3 2, S.E. 2, S.W. 2, N.W. 3, E. 2.
" 18 to " 24	3	9½	1.47	2	N.E. 2 3, E. 2, S.E. 2.
" 25 to " 31	1	2	0.21		W. 4 3, N.W. 3, S.E. 2, N.W. 3, S. 2.
Aug. 1 to Aug. 7	3	2¾	2.29	3	S.W. 2, W. 4, S. 2, W. 3, N.W. 3, N.E. 2.
" 8 to " 14					S.E. 2, S.W. 2, S. 2, W. 3 4.
" 15 to " 21	3	5¼	1.94	3	N.W. 3, N. 3, N.E. 2, E. 2, S.E. 3.
" 22 to " 28	1	3	0.63	2	E. 2, S.E. 2, W. 3, N.W. 2 3, N. 3, N.E. 2.
" 29 to Sept. 4	1	1	0.62	2	S.E. 2, S.W. 2, S.E. 2, N.E. 3.
Sept. 5 to " 11	2	5	2.04	1	E. 2, S.W. 3, N.E. 2, N. 3, N.E. 2.
" 12 to " 18	2	9½	1.46	2	S.E. 2, W. 2, S.E. 2, S. 2 3.
" 19 to " 25	1	½	0.02		S.W. 2, W. 3, N.W. 4 2, S.W. 2, S.E. 2 3.
" 26 to Oct. 2	2	19	1.15		S.E. 2, S.W. 2, N.W. 2, S.E. 2, W. 2 3.

[1] For explanatory remarks, *vide* tables for 1854.

Weekly Mortuary Reports in St. Louis from April 1 *to October*, 1853.

Week ending Sunday	Weekly aggregate of all ages.	Total of 5 years and under.	Total of diarrhœa.	Total of dysentery.	Total of cholera infantum.	Total of periodic fevers.	Total of continued fevers.
April 3	61	32	1	1	...	1	4
" 10	69	29	2	4	...	1	5
" 17	83	34	3	2	...	2	1
" 24	64	24	2	2	1	2	3
May 1	68	35	1	4	...	2	2
" 8	74	43	1	2	...	2	4
" 15	42	21	...	1	1	2	2
" 22	63	31	2	8	1	1	1
" 29	49	27	2	1	1	2	1
June 5	57	36	1	2	2	...	1
" 12	70	45	4	3	2	5	1
" 19	83	51	5	5	6	1	1
" 26	77	53	5	1	7	3	1
July 3	81	56	2	7	14	1	4
" 10	97	64	6	9	15	7	4
" 17	80	51	4	4	7	2	2
" 24	68	42	2	4	7	1	4
" 31	106	57	3	4	9	8	8
Aug. 7	92	56	2	3	9	5	8
" 14	137	66	4	6	12	10	5
" 21	107	63	1	5	13	9	5
" 28	75	47	4	4	8	4	3
Sept. 4	115	53	4	4	6	24	11
" 11	121	44	6	6	9	20	10
" 18	97	34	7	9	6	13	4
" 25	75	30	6	5	3	11	5
Oct. 2	111	43	8	12	1	9	5

City Hospital Report.

TYPHOID FEVER, 1853.

T. Y. BANNISTER, M. D., *Attending Physician.*

SEX.	AGE.	NO. OF DAYS IN HOSPITAL.	RESULT.
Male,	19,	22,	Discharged.
"	14,	25,	"
Female,	17,	20,	"
"	33,	45,	"
"	13,	20,	"
"	14,	19,	"
"	11,	1,	Died.
"	10,	3,	"
Male,	27,	15,	Discharged.
"	30,	18,	"
"	22,	18,	"
Female,	12,	23,	"
Male,	18,	28,	"
"	32,	22,	"
"	16,	18,	"
"	24,	30,	"
"	45,	26,	"
"	37,	18,	"
"	60,	5,	Died.
"	39,	14,	Discharged.
Female,	66,	5,	Died.
Male,	36,	18,	Discharged.
"	44,	12,	"
"	19,	14,	"
"	21,	26,	"
"	45,	25,	"
"	33,	7,	"
"	21,	3,	Died.
"	28,	8,	"
"	48,	6,	Discharged.
"	30,	18,	"
"	40,	20,	"
"	28,	23,	Died.
"	26,	19,	Discharged.
"	48,	3,	Died.
"	28,	26,	Discharged.
"	22,	9,	"
"	15,	13,	"
"	56,	15,	Died.
"	22,	11,	Discharged.
Female,	23,	12,	"

SEX.	AGE.	NO. OF DAYS IN HOSPITAL.	RESULT.
Male,	24,	12,	Died.
"	28,	4,	"
"	40,	10,	"
"	20,	(1 hour,)	"
"	19,	17,	Discharged.
"	20,	20,	"
"	31,	10,	"
"	22,	9,	"
"	20,	13,	"
"	20,	11,	"
"	45,	(1 hour,)	Died.
"	22,	5,	Discharged.
"	35,	25,	Died.
"	20,	21,	Discharged.
"	37,	13.	"
"	17,	13,	"
"	17,	18,	"
"	9,	17,	"
"	22,	26,	"
"	31,	11,	"
"	33,	15,	"
"	45,	15,	Died.
Female,	20,	17,	Discharged.
Male,	23,	9,	Died.
"	23,	4,	"
"	22,	2,	"
"	33,	15,	"
"	21,	16,	Discharged.
"	24,	16,	Died.
"	30,	3,	"
"	19,	17,	Discharged.
Female,	25,	26,	"
Male,	19,	27,	"
"	19,	17,	"
"	24,	23,	"

General Report of the Cases of Disease among the Emigrants landed from Steamboats at Quarantine Island, St. Louis, 1853. By F. P. LEAVENWORTH, M. D., Quarantine Physician.

Nativity of subjects.	Sex.	Age.	Date of arrival.	Date of discharge.	Form of disease.	RESULT AND REMARKS.
Kentucky	M.	22	Jan. 16	Jan. 28	Remittent fever	Recovered.
Ireland	"	27	21	Feb. 28	" "	" River closed by ice several weeks.
"	F.	7	Mar. 11	Mar. 11	Diarrhœa	Died in four hours.
"	"	5	11	20	"	Recovered.
Germany	M.	24	12	17	Typhoid fever	Died.
Ireland	"	24	24	April 9	Remittent "	Recovered.
"	"	23	25	6	Rheumatism	"
England	"	24	April 19	30	Remittent fever	"
Vermont	"	33	May 2	June 3	" "	Fever superv'd on diarrhœa.
Ireland	"	28	12	May 17	Intermittent "	Recovered.
"	"	1	25			Corpse when landed.
"	"	30	30	June 15	Pneumonia	Recovered.
Germany	"	33	June 12	30	Phthisis	Died.
Ireland	F.	4	16	30	Remittent fever	Recovered.
Germany	"	33	20	30	" "	"
"	"	50	22	29	Typhoid "	Convalescent when landed.
"	"	27	22	27	" "	Died. Sister of last.
"	M.	47	22	29	Dysentery	"
"	F.	30	24	July 3	Typhus fever	"
"	"	38	24	5	" "	Recovered.
"	"	48	24	12	Phthisis	Died.
"	M.	19	24	June 28	Ch. diarrhœa	"
"	"	37	25		Varioloid	Sent to Smallpox Hospital.
"	"	32	25		"	" "
"	"	19	25	30	Diarrhœa	Recovered.
"	F.	22	26		Varioloid	Sent to Smallpox Hospital.
"	M.	½	25			Corpse when landed.
"	F.	17	25	July 21	Typhus fever	Recovered.
"	"	14	25	14	Diarrhœa	"
"	M.	38	26	Aug. 6	Fever	Diarrhœa supervened.
"	F.	33	26	July 20	Phthisis.	Died.
"	"	½	26			Corpse when landed.
"	M.	50	26	21	Diarrhœa	Recovered.
"	F.	4	July 1	14	"	Died.
"	M.	1½	1	Aug. 16	"	Recovered. } Father and son.
"	"	36	2	18	"	" }
"	"	6	1	July 5	"	" } Relatives.
"	F.		1	5	"	" }
"			5			Corpse.
Ireland	M.	28	2	10	Intermittent fever	Recovered.
Germany	"	2	9	17	Diarrhœa	"
Ireland	"	31	10	17	Chagres "	" From California.
Illinois	"	28	10			Corpse.
Germany	"	18	16	18	Abscess	Recovered.
Wisconsin	"	48	20	July 28	Intermittent fever	"
Ireland	"	28	22	28	Remittent "	"
Germany	"	6	23	Aug. 6	" "	"
"	"	26	25	6		"
"	"	33	25	6		"
"	"	30	27	28	Yellow "	Died.
Ireland	F.	20	30	10	Menorrhagia	Recovered.
"	M.	28	30	18	Yellow fever	"
Indiana	"	24	30	3	" "	Died. Fever supervened on diarrhœa.
Ireland	F.	24	Aug. 5		" "	Corpse.

Quarantine Report, 1853—Continued.

Nativity of subjects.	Sex.	Age.	Date of arrival.	Date of discharge.	Form of disease.	RESULTS AND REMARKS.
Germany	F.	17	Aug. 6	Aug. 17	Erysipelas	Recovered.
Michigan	M.	41	6	Sept. 20	Yellow fever	"
Germany	"	25	7	Aug. 7	" "	Died.
Ireland	"	26	7	20	" "	"
Germany	"	28	10	20	" "	"
Ireland	"	28	10		" "	Corpse.
Germany	"		10		" "	"
Ireland	"	33	13		" "	"
Italy	"	35	16	18	Remittent fever	Convalescent on arrival.
Germany	"	25	16	19	Yellow fever	" "
Ireland	"	32	10	23	" "	" "
"	"	25	10	29	" "	" "
Germany	"	24	18	24	" "	Died.
"	"	26	18	20	" "	"
"	"	24	18	21	" "	
"	"	26	18	18	" "	"
"	"	29	22	29	" "	
France	"	37	22	27	" "	"
"	F.	37	22	30	" "	
Ireland	M.	35	23	25	" "	
"	F.	22	23	25	" "	Convalescent on arrival.
"	M.	29	23	26	" "	" "
Germany	"	23	23	26	" "	" "
"	"	23	23	30	" "	" "
"	"	27	23	29	" "	Died.
"	"	52	23	26	" "	"
"	"	36	23	25	" "	"
"	"	25	23	23	" "	"
"	F.	32	23	26	" "	
Unknown	M.		23			Corpse.
France	"	10	24	Aug. 30	Intermittent fever	
Germany	F.	14	25	Sept. 2	Remittent "	} Brother and sister.
"	M.	3	25	2	" "	
Ireland	"		25	Aug. 26	Yellow "	Died.
Germany	F.	16	27	Sept. 3	Diarrhœa	
England	M.	28	30	26	Intermittent "	
"	"	32	30	26	Yellow fever	
U. States	"	20	30		" "	Convalescent on arrival.
Ireland	"	28	30		" "	"
"	"	23	30	30	" "	"
New York	"	30	30	30	" "	"
Ireland	"	21	31	1	" "	Died "
"	"	18	Sept. 2	5	" "	
"	"	24	2	6	" "	Died.
Maryland	"	32	2	5	Intermittent fever	Recovered.
Ireland	"	26	7	9	" "	"
Germany	"	21	7	9	Yellow fever	Died.
"	"	24	11		" "	Convalescent.
N. Orleans	"	16	14		" "	"
Unknown	"	25	14			Corpse.
Germany	"	18	15	17	" "	Died.
Unknown	"		26			Corpse.
"	"		26			"
Germany	"	23	27	27	" "	Died.
Ireland	"	29	30	Oct. 1	" "	"
"	"	25	Oct. 1	29	Paralysis	Preceded by apoplexy.
"	"	35	5	5	Fever	Died.

Quarantine Report, 1853—Continued.

Nativity of subjects.	Sex.	Age.	Date of arrival.	Date of discharge.	Form of disease.	RESULTS AND REMARKS.
Arkansas	M.	18	Oct. 16	Oct. 18	Intermittent fever	Died. } Brothers.
"	"	14	16	18	" "	Died. } Chronic.
Germany	"	35	20	31	Remittent "	Recovered.
"	"	3	20			Corpse.
Ireland	"	35	21	29	Remittent "	Recovered.
"	F.	12	21	29	Intermittent "	" } Family from
"	"	12	21	29	Remittent "	" } Illinois Cen-
"	"	8	21	29	Intermittent "	" } tral Rail-
"	"	6	21	29	" "	" } road.
"	M.	4	21	29	" "	" }
"	"	36	30	Nov. 6	Diarrhœa	Died. Abscess of liver.
New York	"	28	29	7	Remittent "	Recovered.
Illinois	"	18	Nov. 4	23	Dysentery	"
Ireland	F.	18	6	25	Remittent "	"
"	"	28	6	25	Puerperal "	"
Germany	M.	30	13	25	Ch. diarrhœa "	Died.
Virginia	"	17	29	30	" "	"
Germany	"	27	29	Dec. 6	"	Recovered.
"	"	20	Dec. 16	24	Cholera	"
Scotland	"	24	20	20	"	Died.
Germany	"	40	20	Jan. 12, 1854.	Yellow fever	Recov'd. Typhus icterodes.
"	"	49	20	Dec. 20, 1853.	Cholera	Died } One hour after
"	F.	46	20	Jan. 4, 1854.	"	Recovered. } arrival.
"	"	13	20	Jan. 4	Cholerine	" } These five cases
"	"	10	22	4	"	" } were of one
"	M.	16	21	4	Cholera	" } family.
						River closed by ice until February, 1854.

It will be noticed that the number of cases of disease occurring, or rather landed at quarantine in this year, falls much below that of 1852, or that of 1854. The cases of yellow fever were principally the deck hands of steamboats; among the immigrants there were but few cases.

It will be further noticed that the only cases of cholera reported, occurred in December, and may be viewed as the germs of the epidemic that pervaded the city in the succeeding year. Careful inspection of the quarantine reports will evince what a fruitful source of disease is afforded by the immigrant supply which annually flows into the city by way of the southern river, and it will sustain the general views presented in our report as to the marked prominency of this channel being, in every year, the source of cholera and its cognate, as well as other diseases.

REPORT ON THE YEAR 1854.

This is memorable, in St. Louis at least, as being the most unhealthy and fatal year, after 1849, that has occurred since the reappearance of cholera. It was also remarkable for the hottest and dryest summer known within the recollection of the oldest inhabitants. It was, in this respect, greatly in contrast with the year preceding, which was healthy, and the summer of which was comparatively the most moderate, in point of temperature, experienced for several years. To present these facts in their plainest form, we have detailed the meteorological observations for the spring and summer months of this year in duplicate, showing the daily and weekly climatic data, so as to compare them with the mortuary tables, which we also made out to some extent, to show the daily and weekly results. Cholera, cholera infantum, diarrhœa and dysentery predominated greatly in this year, and the conclusions presented in our previous pages as to the influence of the "cholera cause" in increasing the amount and fatality of those and other diseases are sustained by the statistics of this year. During the excessive heat of the summer, nervous affections were unusually frequent, and fatal in adults as well as in children. Placing out of view the excessive mortality by "sun stroke," the fact still remains that apoplexy, cerebritis and meningitis were of more frequent occurrence in this than in previous summers, when the heats were not so excessive. The chronic results of affections of the nervous centres, exist in many subjects as sad living monuments of the effects of the intense summer heat, aside from the proofs of these which the mortuary registry affords. The visitation of dysentery was the most widely spread and persistent that we have noticed in this section of country; it was also the most fatal. A few cases of well-marked yellow fever originated in the city in August, but that which was most remarkable, as to fevers, was the reduced prevalence of our climatic fevers, particularly intermittent, during the summer and autumn. The mortuary tables give no idea of this comparative reduction, for the excessive prevalence of cholera in July rendered the cases of bilious fever more fatal than in the previous year; hence an erroneous deduction might be sustained from the mortuary data, if these be taken as the basis of conclusions. The diminished prevalence of fevers was the subject of general remark among physicians, and the statistics of the sale of quinine (a plain

index of the relative frequency of these diseases in different years) show a very great reduction in this year compared with the preceding years. In communications sent to us, and from other media of information, we also learn the fact that cholera and its cognate diseases were redundant, whereas climatic fevers were diminished. This remark applies to almost every section of the State, and was generally referred to the one cause, namely, the excessive heat of the summer, the absence of humidity, and the thorough desiccation of organic matters in the soil. The only exception to this in any section was in the northern counties of the State, and in southern Iowa, which district was visited by heavy rains in July: these climatic fevers commenced earlier than usual.

Diseases of St. Louis.

Cholera.—This disease appeared, in this as in other years, first by relays of cases in the first or winter quarter. The earliest notice we have of its approach was the occurrence of cases at quarantine in December, 1853. Additional cases occurred there, and in the city in January and February, 1854, among immigrants, crowds of whom began to pour in on the opening of navigation and continued for the rest of the year. The total number arriving at quarantine in February and March was over 5,000, the total there arriving from February 1st to June 30th was 12,775. (See Quarantine Report and Statistics of Immigration.)

In the beginning of April, a sudden increase of the disease was noticed in this city; a diminution of it occurred towards the end of that month, which was maintained until the end of May. During the second and third weeks of June, however, the prevalence of the disease was greater than in any preceding weeks of the year, and it continued rapidly increasing, and from the first to the tenth of July, the epidemic was at its maximum. A gradual diminution then began, which continued until the middle of August, when an increase was again observed, which prevailed to the end of the first week in September, when a rapid reduction was maintained, and by the end of the month the epidemic ceased in the city. Three stadia are therefore noticeable of the disease in this year; the first, beginning in January, ended with April; the second, beginning after the middle of May, attained its acme by the middle of July, declined until the middle of August, when the third and last *stadium* was presented, which ended with September. Of these, the

second or middle was the severest as regards the extent of its diffusion, or the number included in its outbreak.

The general opinion of physicians, as to the character of the disease in this year, is that is was as virulent as in 1849, the great cholera year. In our opinion it was even more malignant than in that year. The cases we saw, and those of which we heard, were more rapidly fatal than the generality of cases coming under our notice in 1849. The diarrhœal stage was more briefly displayed, the stage of collapse more rapid in progress, the general distress of the patient was greater, and the signs of cerebral and pulmonary congestion were more marked, and were presented earlier. We need scarcely add that remedies seemed more powerless in this than in any previous epidemic. In short, in proportion to the number attacked, cholera in this year carried off a greater proportion of subjects than in any of its previous visitations.

Class of Subjects attacked.—The newly-arrived immigrants suffered most severely from this disease. We have no means of computing accurately the proportion they formed of the weekly mortality in the city, as the legal ordinances which require a statement of the nativity, period of residence, locality, &c., in the physicians' reports of deaths were not fully enforced by the city authorities. The immense excess of mortality amongst the immigrant class attracted the attention and censures of the public press, and, as an evidence of the above we take at random a few extracts from these prints, as well as also to show the popular estimate of our last summer weather:—

(From "the St. Louis Republican.")

"*Weekly Mortality in St. Louis.*—We annex the official report of the City Register of the mortality in St. Louis, for the week ending on the 12th. The total number of deaths, it will be observed, was 162, being an increase of 57 on the previous week. But it will also be noticed that over one-half of those who died were persons who had been in the city but a short time; 40 having been here from 1 to 15 days only, 35 from 1 to 30 days, and many others from one month to 4 or 5 months. The weather, too, was such as had rarely been experienced here so late in June—cold, wet and cloudy—making fires absolutely necessary to comfort. Some of the deaths were produced by cholera well defined; but the cases cannot be regarded in any other light than as sporadic, and we have no apprehension of any epidemic during the present season.

It is more than probable that the next report of deaths will diminish the number now recorded.

"Abstract of deaths in the city of St. Louis, for the week ending June 12th, 1854:—

White males	88
" females	71
Children of five years and under	70
Free colored	2
Slave	1
Total	162

"Of the above deaths, over one-half are emigrants, who have been in the city but a short time, viz: 40 from 1 to 15 days; 35 from 1 to 30 days; and also many others who have been in the city from one month up to four or five months. Attest:

"SOC. NEWMAN, *Register.*"

(From "the St. Louis Republican.")

"*Mortality in St. Louis.*—The weekly report of the whole number of interments is published below. There is an increase on the previous week's statistics of ten; but it would seem from the physicians' certificates that only forty of the whole number were citizens of St. Louis, all the others were from abroad, and mainly emigrants from Europe. The public hospitals furnish a very considerable proportion of the deaths, and the patients are generally sent there in a dying condition.

"Abstract of deaths for the week ending, June 19th, 1854:—

White males	89
" females	81
Children of five years and under	75
Slaves	2
Total	172

"N. B. From the very imperfect returns of the physicians and from their not complying with the law and ordinances of the city, it is impossible to make a correct statement as to the number of emigrants who have died during the week.

"On an examination of the certificates one would judge that, out of the total mortality, 40 only were citizens. Attest:

"SOC. NEWMAN, *City Register.*"

(From "the St. Louis Republican.")

"*Health of the City.*—Innumerable reports have been circulated in regard to the health of the city, and, as the best means of informing the community accurately of the facts, we have obtained of the City Register a somewhat detailed statement of the interments at each cemetery for the week ending with Sunday last: according to the official reports, there were the following interments in the different cemeteries:—

City Cemetery	96
Rock Spring	174
German Protestant	44
Lutheran	14
St. Vincent	39
Salem	29
Holy Ghost	52
Bellefontaine	19
Total (July 10)	470

"Of this number, 207 were of 5 years of age and under, and the deaths from cholera were 207. Of the interments in the city cemetery, all were emigrants newly arrived; and over two-thirds of those interred in the Rock Spring cemetery were also emigrants. The same might be said of the Holy Ghost, and one or two other cemeteries.

"We need not undertake to account how it is that emigrants die in this wholesale manner. There are those who ought to inquire into and correct these evils. Nothing can be more certain than that it is absolutely necessary that they should take passage on commodious boats from New Orleans; that they should undergo some cleansing process after leaving ship-board; that they should be careful of all excesses in eating and drinking whilst on our steamers, and that they should be furnished with clean and well ventilated quarters on their arrival here. Instead of this, they are crammed on board our steamboats immediately on their arrival at New Orleans, and by their own emigrant agents; they buy and eat everything within their reach; and by the time they reach here, they are all fit subjects for cholera, ship-fever, or anything else. Here they are stowed away so thick, in the most uncomfortable tenements in the town, that it is a miracle if they fail to sicken and die. Were it not for this wanton neglect of these unfortunate emigrants, by those who ought to take more interest in them, our bills

of mortality would present no remarkable increase—none not justified by the extreme heat of the summer.

"Two such weeks of hot weather as we have just passed through, have never been experienced in this city. Every day for that time, and almost every night, the heat has been intense. There has been no change or mitigation of it, and the pavements and the houses are heated to an extent never before known. Almost every day of the past week, persons who were exposed to the sun were stricken down, and a good many of them lost their lives. On Sunday, seven died from this cause. There were others, females as well as males, who died from the imprudent use of ice-water, and these accidents go to swell the list of mortality.

"We make these statements in order to quiet the minds of those who may have friends here, or who may have business here. As soon as there is a change in the weather, and immigration ceases, there will be a change in the bills of mortality. Few foreigners are now arriving from New Orleans, and those who are now here, will soon be convalescent."

(From "the Republican," July 14th.)

"*The Health.*—A portion of the city in the neighborhood of the Park mill on Market Street, was greatly afflicted on Sunday and Monday by fatal cases of cholera. The deaths numbered some fifteen. After that time the disease abated. On Wednesday, yesterday morning, there was only one death. The ravages of the disease were confined to one block chiefly inhabited by emigrants, and in a most insalubrious condition."

(From the "St. Louis Evening News," Sept. 1st.)

"*Hot Weather.*—The long continued hot weather is almost unprecedented in this city. For almost four months the thermometer has ranged in the neighborhood of 100, as often above as below. Yesterday, there were seven deaths from sunstroke reported, and probably several more not known. Had the weather been damp instead of dry at the same temperature, the health of the city must have suffered severely. The decay of vegetable matter producing the malaria so favorable to the prevalence of febrile diseases, has been prevented by the heat drying it before decomposition could take place. The state of the atmosphere and of the sky at present seems to indicate the near approach of rain, after which, it is to be hoped, the temperature will be considerably lower."

(From "the Republican," Sept. 19th.)

"*Office of the Board of Health.*

"For a few days past, this office has resembled a hospital more than anything else. The sick from the city and county have poured into it, and sometimes the place has been almost jammed with invalids lying over the floor, on the doorsteps, and leaning their emaciated forms against the walls, pleading for relief.

"Last evening the office was thronged with ten or a dozen of these poor distressed beings, who had been sent in from the railroad. They had been taken sick and were unable to work, and had come upon the city for succor. Some of the city officers were in a quandary in regard to the proper method of disposing of these subjects. They thought the city had nothing to do with them, and that the county should take care of its own paupers. As they had not been residing in the city for a length of time, they could not be considered as entitled to an asylum in the City Hospital, but it was finally concluded to give them the benefit of it, as some disposition had to be made of them. These invalids had been lying there, exposed in the streets for two or three hours, and there is scarcely an hour during the day that the office does not contain two or three hospital subjects."

The following, published, we believe, in 1849, is as appropriate as it is true of the year 1854:—

"*Health of St. Louis.*—The editor of the *Memphis Eagle*, who has been, it seems, a citizen of St. Louis, indulges in the following expositions in regard to the present epidemic in St. Louis and Cincinnati:—

"'We do not think, however, that the causes of this extraordinary amount of deaths can properly be found to be local to St. Louis. After a residence of many years in that beautiful city, we are prepared to pronounce it one of the healthiest places in the valley of the Mississippi. In no city have we met more of those venerable men whose whitened locks proclaim that patriarchal age which an otherwise hale appearance would seem to belie, and, from some observation in the premises, we judge the average length of human life in the city of St. Louis to be greater than in any other city of the West.

"'The secret—if secret it be—of the immense mortality in St. Louis, is found in the fact that it is a point upon which foreign

emigrants concentrate more largely than upon any other in this country. Not only is this the case, but it is further a kind of mammoth caravansary, in which emigrants of all climes and nations tarry for a day, or a week, or a month, and then spread themselves, portions of the mighty tide of immigration to this country, through the unoccupied portions of the great and rich northwestern valley. They generally bring with them to St. Louis the seeds of diseases which float upon the thousand winds through which the traveller passes, and then they fall victims finally to the malady, contracted on the disgusting after-deck of a Mississippi steamer, or in the gloomy, comfortless, and ill-ventilated cabin of a lazily-moving canal boat. The quarantine which the authorities of St. Louis have just established, is, we think, a wise, humane, and necessary arrangement, beneficial to the emigrant, not injurious to commerce, and all important to the city. It will efface from St. Louis the reproach of being called the graveyard of the Mississippi valley, and will place the emigrant under most judicious sanitary restraint and medical supervision. The quarantine should be established as a permanent measure.'"

The editor of the *St. Louis Medical and Surgical Journal*, in his number for July, presents some remarks on the health of the city, which fully concur with the statements above given. We refer our readers to the number, p. 380.

Causation.—No disease, in its origin and progress, shows more clearly the influence of the "crowd poison" than epidemic or Asiatic cholera. It originates in the midst of the Atlantic, in the crowded steerage of the immigrant ship, which sailed from no unhealthy port to which the germinating seeds of the disease could be traced. It proclaims itself on the deck of the Mississippi steamer, surcharged with its living and dying freight when the port whence the vessel sailed, and those which it passes are exempt from the disease. It breaks out amongst these emigrants in the crowded hovels in which they herd together on landing. It thus infests them until the poison, gathering potency in the narrow alleys and humid courts of the city, and fostered by the habits of the immigrants, spreads from there as a foci and contaminates other like localities. Such has been the source of cholera in St. Louis, in every year of its visitation.

Selection of Victims.—It has been often noticed that this disease selected its subjects as if by preference from certain families, to the exclusion of others, in every way similarly exposed to its attack.

This selection once made, the fatality of the disease was remarkable.

Dr. McPheeters, in his report on epidemic cholera in St. Louis in 1849, relates instances of this "elective affinity," and, in the subsequent years when cholera has prevailed, the same has been observed. Thus, in this year, an English family, composed of father, mother, and six children, were landed at quarantine. Notwithstanding every precaution that could be taken to prevent it, the mother and three children were there attacked; the mother and two children died. To prevent, if possible, their further exposure, the remaining members of the family were removed to the city. A few days after their removal, two of the children were attacked and died. In this case the quarantine physician was awakened to the danger of the family, for he had observed this family proclivity to the disease in other instances, and therefore took every means at command to prevent the anticipated result, yet without avail. Many other families, situated in every respect like this one, and even more liable to the disease by reason of their imprudence, nevertheless escaped. Dr. Leavenworth, who stated the above facts to us, noted other instances of a parallel kind. Under our own observation, similar cases have occurred. This family tendency to the disease is not dependent upon locality, for of some families of whom it is recorded, the members were scattered, some being in the city, others in the country, yet the disease selected them as victims. When an inception of this kind has appeared in a family, that is, when several members have been attacked, we have known of the others being removed to presumed healthier localities in order to avoid the disease, yet it pursued them.

Localization of the Disease.—The disease prevailed to a greater or less degree, in every section of the city, but in some districts more than in others. The unimproved sections, or those in which grading had been but lately effected, suffered more than the well improved central portions of the city. This was owing in part to the character of the local population, but as much, also, to topographical circumstances. The population mostly attacked were reckless of exposure, very imprudent in their habits of living, and domiciliated in crowds in illy-ventilated and damp tenements. Localities which had been recovered from partial or complete inundation by filling in with earth, or other means of drainage, were the selected haunts of the disease. Districts noted as the foci in every year of bilious and intermittent fevers, and of diarrhœa and

dysentery, were, in cholera years, overrun by this disease. It is a remarkable fact that steamboats which in one year were visited by the disease, were most liable to its reappearance in subsequent years. This can be sustained by reference to our city newspapers for the years that cholera invaded the city. Among the localities within the city that may be noted as cholera districts, are the first and second wards in the southern section, the "graveyard" lying between Chouteau's Lake and Market Street, and Ninth and Eleventh Streets; "Hell's half-acre," which was formerly the basin of the lake, located between 5th and 7th Streets, and Spruce Street and Chouteau Avenue; the block bounded by St. Charles, Eighth and Ninth Streets, and Washington Avenue, and a cluster of eight or ten squares, or blocks, the centre of which is the intersection of Eleventh and Morgan Streets. In these last two localities, the neighborhoods are, to some extent, supplied with water from wells excavated in part in the limestone strata underlying the soil, which is here not very deep.[1] The surface drainage has a fair opportunity to percolate the soil and mingle (very imperfectly purified, it may be supposed, by the filtration) with the well water. The localities last described are in the central surface section of the city, according to the topographical description given in the opening pages of our report. Another cholera district in this section is the vicinity of Green Street from Fourth to Tenth Streets. The district composed of from 30 to 40 blocks, bounded by Franklin Avenue and O'Fallon Street south and north, and Sixth and Fourteenth Streets east and west, has, in every year, been severely visited by cholera. This district is traversed by low land which was formerly an extensive ravine or pond, now recovered from inundation by draining. The north sections of the city, the towns of Bremen and Lowell, are also among the districts that, every year, were pregnant with cholera.

(An instance of the localization of cholera poison is reported to us while we are writing (April 26th). Within a week, eight cases of cholera, all fatal, have occurred in an alley between Franklin Avenue and Wash. Streets, and Sixth and Seventh Streets, E. and W. These are the first cases in this year (1855) that have occurred in this section of the city, and originate in the only tenements in the alley that were invaded by the disease last summer. An-

[1] We doubt if the soil, in either location, extends 20 feet perpendicular below the surface.

other instance we may report as occurring in a previous year. In the block bounded by St. Charles, Eighth and Ninth Streets, and Washington Avenue, a family removed to avoid the pestilential neighborhood, one of the members having died by cholera. The removed members were exempt from the disease so long as they remained away from the deserted house. In some weeks, their alarm having subsided, and the health of the locality having improved, two of the family returned to the house to supervise its being cleaned, previous to its being again occupied. On their return to their temporary residence, at a distance from their former infected dwelling, both of them were attacked with cholera, one on the night succeeding the visit to the infected dwelling; the other on the third day after.)

Mortality.—This is shown in the following Monthly Table. In a subsequent portion of the report, the daily mortality during the epidemic is presented in connection with that by diarrhœa, &c.

Monthly Mortality by Cholera in St. Louis, 1852.

	Jan.		Feb.		Mar.		Ap'l.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Total.		Aggregate both sexes.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 2 yr's	..	..	..	..	..	1	1	2	7	6	28	17	21	19	3	3	..	2	1	..	..	..	..	..	61	50	111
2 to 5 "	..	..	..	..	1	1	4	1	18	9	32	36	30	37	3	4	2	..	1	1	..	..	1	2	92	91	183
5 " 10 "	..	..	..	..	..	1	6	6	10	3	16	14	22	17	6	6	1	3	2	1	..	..	1	..	64	51	115
10 " 15 "	..	..	..	..	1	..	1	4	6	6	9	10	17	7	2	1	1	1	1	..	..	..	..	..	38	29	67
15 " 20 "	..	..	..	..	..	..	3	1	9	3	12	12	11	16	2	3	1	1	..	..	..	..	..	..	38	36	74
20 " 30 "	..	..	1	..	..	..	20	5	25	11	42	52	65	50	20	15	15	5	4	..	2	..	3	..	197	138	335
30 " 40 "	..	..	..	..	1	3	12	1	18	16	50	43	61	49	14	11	5	4	4	3	..	..	1	2	166	132	298
40 " 50 "	..	..	..	..	..	1	7	4	15	9	24	26	28	25	13	9	5	1	..	..	1	..	..	2	93	77	170
50 " 60 "	1	..	..	..	..	..	5	2	5	5	19	14	14	16	8	5	2	..	1	..	..	..	..	..	55	42	97
60 and over	..	..	..	1	..	..	4	2	2	4	8	9	9	15	1	5	1	2	1	..	..	1	1	..	27	39	66
Unknown	..	..	..	..	..	..	..	..	3	..	5	1	2	2	1	1	1	2	..	..	..	..	..	..	12	6	18
	1	..	1	1	3	7	63	28	118	72	245	234	280	253	73	63	34	21	15	5	3	1	7	6	843	691	1534

ANALYSIS.

	Per cent.
Ratio of cholera mortality, to entire mortality of the year	22.55
" subjects dying under 5 years of age to population of same age .	1.53
" " of 5 to 10 years to population same age	0.81
" " of 10 to 15 " " "	0.67
" " of 15 to 20 " " "	0.77
" " of 20 to 45 " " "	1.04
" " of 45 to 60 " " "	3.89
" " of 60 years and over " "	4.77

Diarrhœa, Dysentery, Cholera Infantum.

We notice these diseases in connection, because their maximum prevalence in this year occurred at the same time, namely, in the summer. They were all equally influenced by the same meteorologic causes, were often intercurrent one with the other, all prevailed to an unusual extent, and were under the influence of the one great epidemic cause, that of cholera, which prevailed in the city from April to October.

Diarrhœa first became manifestly prevalent in the months of March and April, when epidemic cholera was about beginning its reign. It somewhat diminished in May, but resumed its course in an increased degree in June, and persisted, with but little variation until October. The disease observed in the autumn was rather marked among the resident population, but among emigrants recently arrived, it continued with much fatality until December, when it was reduced, yet not to the degree usually observed in the winter season. On looking over the mortuary table, it will be observed that the monthly mortality by this disease was nearly uniform for the last half of the year.

Dysentery was more than usually prevalent in the final winter months at the commencement of this year, as also in the vernal quarter. During the last vernal month it was more prevalent than ever before known in the city in this month. In July, August, September, and October, its epidemic invasion was the most extensive we have ever witnessed; in November, its ravages diminished in a more notable degree than did those of diarrhœa; still, in that month and in December, the number of its victims was unusually great for that season of the year. In point of limit of time that it existed, it was, we believe, the most persistent epidemic we have ever known here.

Cholera Infantum began earlier this year than usual; its invasion was greater than in any year within our knowledge, for the climate or meteorological circumstances upon which it depends were notable in this year, and its mortality exceeded that of any previous year. The one great cause that most notably influenced it, namely, atmospheric heat, was in this year unusually powerful, and it was aggravated by the epidemic influences which generated cholera, dysentery and diarrhœa, that is, if these have a causation different from that of cholera infantum.

We may, perhaps, be better able to show the prevalence of these enteric affections, the congeners of cholera, by the following quotations taken from our diary of prevalent diseases of St. Louis, and entered during the spring and summer when their distribution in the city was most liberal. May 15th. Some alarm among our citizens about cholera, which is for the first time attracting public attention. Diarrhœa is, evidently, more than usually distributed in the city; the preceding form is cholerine.

May 31st. Tendency to distribution of dysentery is very manifest. The prodromus is, in most instances, occasional colic pains, relieved by a discharge of flatus; some complain of malaise, loss of appetite, and have slightly furred tongue. It is noticeable that the alvine dejections are suspended during the day and become profuse at night. Before dysentery proper is manifested, the symptoms are sense of pain and weight in the stomach, experienced after taking food, and some one or two semi-fluid alvine dejections occur, colic preceding them. This is probably owing to the distended stomach pressing on the irritable transverse colon. In some instances, the frequency of the operations is scarcely augmented; the patient's appetite may be unimpaired; his general feelings during the day are as usual when in health, with the exception of occasional colic pains and flatus, with sense of abdominal weight and discomfort; he rests well at night, but next morning is early aroused by colic, and call to stool; the *debris* of digestion, with vitiated secretions from the small bowels, having reached the irritable colon, soon make their presence there known, by calling for their discharge. A profuse semi-fluid stool, composed of fragments of firm feculent matter, mingled with more vitiated feces fluidified by mucus, is discharged, and in an hour or two another dejection, smaller than the first and similar in character, occurs, when the bowels remain quieted until the next morning, when the same *rôle* is repeated as on the day before. These temporary disturbances continue several days, when a variation of temperature or humidity, or an excess of diet, or a meal of fruit, or some other source of increased intestinal derangement intervenes to occasion augmented irritation of the mucous coat of the large bowels, when the more marked and severe symptoms of dysentery set in and persist. The cases of this dysenteric tendency have so far, this season, been gradual in their progress, the programme above described persisting for a variable period of from three to six, eight, or ten days. Some cases go no further than the stage of prodromus, or that of colic irritation, the

subject being prudent enough to correct the abnormal tendency by strict regulation of diet, avoiding other than the farinaceous, and by proper precaution as to exposure to humidity, or insolation, or he takes a laxative combined with, or followed by an anodyne, and the disorder ceases. Some, however, avoid all prudence, or, if cautious for a time, intermit it when but partially relieved of the first threatening of disorder, and experience an increase of symptoms; prudence observed for a brief period, again partially relieves them, caution is again remitted, and the disorder again increases: thus a succession of imperfectly formed attacks recur until a severe and perhaps dangerous attack of ileo-colitis or colo-rectitis is fully established. In the generality of such cases, during the stage of prodromus, although the appetite may be well sustained, a redundancy of acidity in the primæ viæ exists, and eructations occur after ingestion of food, and the alvine evacuations redden litmus paper. Antacids, if resorted to, correct for a time the symptoms, and defer the advent of the graver stage of disease. In this early stage, nausea occasionally attends; in some instances the food is ejected with permanent relief of the disorder, if prudence of diet and exposure be subsequently observed. The tongue in this stage is moist, and has a thin white fur coating its centre; fleeting borborygmi also occur. The nights may be passed somewhat restlessly; the pulse is yet undisturbed, unless the dejections are frequent, and attended with tormina, when it will be frequent and feeble. June 12th. Great numbers complaining of diarrhœa. Cholera notably increasing. The prevalent forms of diarrhœa are those which we previously described as the prodrome of dysentery, namely, the muco-feculent, attended with colic, loss of appetite, &c., and the choleraic or cholerine, a profuse, painless, serous diarrhœa, accompanied with borborygmi. The latter class is perhaps in excess, and the former as to the number attacked. In the former class of cases, the dejections occur soon after rising or after breakfast, and number two or three in the day, the first dejection being perhaps solid and healthy as to color, or but slightly softened, retaining the mould of the intestine, but very pale, being of an ash or sulphur color; this evacuation is succeeded in two or three hours by another; which is semi-fluid, and white, or gray, or of a pale sulphur color, which is voided with tormina and perhaps tenesmus; a third and perhaps a fourth similar to the second is voided within the next twelve or sixteen hours. The tongue is slightly furred with white and is yet moist; the skin is sallow and pallied; the adnatæ are icterode, the appetite

is diminished, there is some sense of general feebleness complained of, but no marked fever. Bilious diarrhœa is also very prevalent, as is generally the case in this month. June 20th. Mortality much increased during the past week. Cholera is extending, and diarrhœa is very prevalent, as the prodrome of dysentery in its muco-feculent form, or of cholera in its serous form, or as an independent disorder in the form of bilious diarrhœa. The most interesting is that which is the initiatory stage of dysentery. The undue prevalence of colorless yet consistent, or semi-consistent alvine dejections is very marked in all its subjects. In this form, a draught of ice-water almost invariably induces tormina and call to stool. June 24th. We have never seen disorder so generally prevalent as diarrhœa has been for the past week; four-fifths of those we meet complain of it. The predominating form is that attended with semi-fluid muco-feculent, ash-colored, or white dejections, with tormina, flatulency, furred tongue, and no perceptible fever, or but fleeting febricula. In those subjects who confine themselves to a farinaceous diet with white meats, two or three of these dejections, rather copious, occur early in the day; paroxysms of colic occur as the day passes on, with one, two, or three small pallid evacuations, or with merely discharge of flatus; at nightfall a copious semi-fluid dejection is passed, and operations are suspended during the night to recur again in the morning. In those who mingle fibrous vegetable matter in their diet, the dejections are more copious, fluid, frequent, and painful, and some ileo-colitis is fully manifested. July 1st, July 8th; July 15th. The record merely repeats that the tendencies to disease observed are the same as in the week preceding. Cholera has much increased, and with it there has been a cessation of almost every form of disease. Cholera infantum is very prevalent, cases of measles and of pertussis are distributed in the city; the number of deaths by sunstroke has been greater than ever known before.

It will be unnecessary to quote further from the journal, as the extracts given bring us to the period of the maximum prevalence of the epidemic of intestinal diseases in the same summer. The record for the months of July and August, presents little more than a repetition of the entries already quoted, with notices of the occasional variations observed in the account of these diseases, and the influence of meteorologic circumstances on these variations. By comparing the weekly mortuary and meteorological tables, very correct deductions as to the operation of climatic causes in the

prevailing diseases of the summer may be educed. The operation of extreme heat in increasing the intestinal disorders, was very manifest, and the favorable influence of reduced temperature in diminishing them was very notable. For example, on July 9th, a change from hot to comparatively mild summer weather occurred, with wind prevailing from the north; this continued, with some elevation of summer temperature, during the day, but with cool nights, until about the 16th. During the week, the occurrence of new cases of these diseases diminished, and subjects previously threatened with dysentery were relieved, their dejections becoming darker, more consistent or pultaceous, and the amount of mucus passed and the tormina diminishing. The same favorable change in disease was again manifested from August 4th to 9th, when a similar change of temperature and wind prevailed. In both of these weeks there was a notable reduction in the mortality by these diseases. On the other hand, we take the entry in the journal for August 27th, which states that, in the preceding week, the weather had been intensely hot day and night; clouds floated several evenings, promising rain, but none fell; scarcely any breeze stirred, which, with the radiation from the clouds, rendered the weather intensely oppressive. As a consequence, disease, generally, was much augmented, and an increase of fatal cholera was a marked result.

The foregoing journalized quotations will afford an idea of the symptoms of the milder form of dysentery. For the purpose of illustration, we may divide the disease, as it usually occurs in St. Louis, into two forms—the mild and the grave, including in the former those cases which are described in the passages quoted, and which constituted a large proportion of the number that occurred in the summer of this year, and, indeed, of every year. The prominent symptoms of the mild form are, increased dejections of feces, fluidified by mucus, and tinged with blood. It will be remarked that the dejections, in the early part of the epidemic season, were near the normal alvine color; as the hot weather advanced, they departed from this hue, assuming the indications of deficiency of bile. They were whitish or grayish, or like the color of sulphur lotum. In the former, known as "bilious dysentery," the redundancy of irritated bile in the alvine dejections, or of a secretion resembling it, gave name to the disease. Sense of weight in the bowels, tormina, in few instances, tenesmus, and loss of appetite were in the mild form associated with the alvine profluvia; but the

general system sympathized but little, in the early stage of the disorder, with the local intestinal distress. If the disorder were neglected, or if it were aggravated by imprudence, fever was superadded to the enteritic lesions, and tenderness, on pressure over some portion of the colon, became manifest. The disease would now increase, and present the succession of changes ordinarily recognized in acute dysentery. The mild form of dysentery, as above referred to, which is the precursor of the graver colitis, we are inclined to view as depending primarily on hepatic congestion, the colitis being the secondary lesion. It is one of the forms of manifestation of what Johnston terms cutaneo-hepatic sympathy, a union of terms which, however vague or unsatisfactory it may appear to some minds, still expresses an idea of relationship or causation which few, who have witnessed the dysentery of hot climates and investigated its etiology, can avoid accepting. The succession of symptoms, in the precursory stage of the disorder, bears out the opinion that hepatic congestion is a primary link in the morbid catenation. There is deficient secretion of bile, as manifested by the pallid hue of the alvine dejections; there is loss of appetite, gastric disturbance, sallow or bilious surface, icterode adnatæ, fulness in the right hypochondrium, coated tongue, &c. When these have lasted for a variable period, increased intestinal evacuation occurs; the dejections—two, three, or four in the day—are diluted with mucus, and preceded by tormina; blood makes its appearance in the dejections; darting pains traverse the colon; the track of this bowel becomes tender on pressure; fever, more or less marked, in time sets in, and finally we have signs of exudative lesions manifested on the walls of the colon. We speak of exudative change in the walls of the colon for the reason that it has been, under our observation, one of the most frequent structural changes known in this form of dysentery. Often the sigmoid flexure, or transverse arch of the colon can be distinctly traced by the rigid state of the walls, developed as disease advances. Tenesmus, it was remarked, was not often a symptom in the mild form of dysentery. This form of the disorder, in the adult, yields readily to remedies directed in view of the pathology above stated. A few grains of calomel, or of blue mass with opium, repeated three or four, seldom oftener than six times, until bile is apparent in the stools, usually results in diminution of the amount of the mucus and blood, and of the frequency of the dejections; fever, if present, abates; and rest, with due regulation of diet, and, perhaps, an aro-

matic and anodyne draught, subsequently, complete the cure. The general effect of the combination referred to, when given in the mild form of dysentery, is to restrain the alvine dejections, and diminish the abdominal distress; at the end of twelve, sixteen, or twenty hours from the administration of the first dose, the pro-bilious operation is usually established, and the symptoms are observed to yield. In the severer cases of this form of disorder, where the signs of structural change in the glands and submucous tissues of the large bowels exist, the employment of moderate topical depletion, succeeded by warm fomentations and blistering, with the necessity of continuing the mercurial to incipient ptyalism, are generally found sufficient to arrest the progress of the disease. It is of advantage often to intermit the mercurial and exhibit the oleaginous or saline laxatives, combined with anodynes, in order to avoid ptyalism if possible; but the mercurial doses cannot, within the general experience of practitioners in this section of country, be entirely superseded in the treatment of the early stages of dysentery in the adult subject. The remarks we have made, apply to one form of dysentery common to the summer season in this portion of the West. It is that form which is marked by a somewhat protracted display of the mild symptoms of dysentery; it is the form we have witnessed oftenest in the adult; it is individualized, so to speak, by the comparatively mild array of symptoms, by being unattended with marked, active, febrile excitement in its early stage. Yet it has a severer stage, or grade, which is the result, sometimes, of neglect of remedies; sometimes, however, this severe stage will supervene, notwithstanding the best directed efforts of art.

The mild form as described, if protracted or neglected, finally attains the severer grade of well-defined colitis, or ileo-colitis, or colo-rectitis, and, in some cases, the inflammation involves the remaining section of the bowels and the stomach. In some instances cystitis is superadded, and, in the adult female, morbid uterine engorgement is an almost necessary complication. When the mild is transferred into the severer grade, the change is usually marked by the occurrence of chilliness, followed by marked febrile reaction, or the febricula of the mild stage exacerbated without chilliness preceding; the heat of skin is increased, the pulse becomes more excited, and the local lesions are much aggravated; in short, the disease now presents the *rôle* of symptoms of acute colitis, with no marked variation from the symptoms of those cases in which acute colitis

is rapidly or promptly evolved in the inception of the attack. To illustrate this, the grave form of the disorder, we quote the prominent symptoms of the following cases, taken at random from a number now before us:—

M., female, æt. 38. September 19th, acidity of stomach, flatulency, slight muco-feculent diarrhœa. 20th, 12 M. Chilliness, fever, frequent muco-sanguine dejections, severe tormina and tenesmus; tongue coated white, its moisture diminished; catamenia, which recurred last week at the due period, to-day returned, attended with usual signs of uterine engorgement; pain in lumbar region distressing; abdomen tender to pressure over uterine and colic spaces; pulse full, firm, tense, ninety-five per minute; nausea, dyspnœa, palpitations of heart. 21st. Symptoms much aggravated last night, now temporarily diminished. Treatment, mercurial with opium, cups to sacral and lumbar regions, warm anodyne fomentations. 22d. Symptoms again aggravated during past night, dejections very frequent, composed of mucus with much blood; tormina frequent and distressing; dysmenorrhœa; skin variable, alternately hot and dry, and cool and sweating; pulse full but soft, eighty-eight per minute. Continued treatment as yesterday, substituting morphia for opium. One-sixth grain sulph. morphiæ given, produced deliria, which subsided on recurrence to opium. 23d. *Mane.* Incipient ptyalism; pulse seventy-two, soft, irregular; skin variable as to temperature and secretion; ten dejections last night, one bilious, the rest of mucus and blood. *Vesper.* Four small muco-sanguine dejections since morning, skin cool, palpitations of heart frequent and distressing, pulse irregular and feeble. *Nocte.* Nausea persistent, vomiting of bile frequent, profuse bilious feculent dejections, with much tormina and tenesmus.

Treatment.—Blister to abdomen. ℞.—Liq. anodyn. Hoffmani c. tr. opii acet.; anodyne enemata. 24th. Small muco-sanguine dejections; nausea continues; pulse, heart and skin as yesterday; exhaustion more marked; course of colon tender to pressure, dysmenorrhœal symptoms persist. 25th, 26th, 27th. Symptoms much the same as on 24th. During the day they remit in violence, but at night are aggravated. Treatment, nutritive stimuli and anodynes, with oleaginous mixture. On the 25th, at night, two grains of English extract of hyoscyamus were given, which produced frightful dreams, deliria, cold sweating, and excessive irritability of stomach and bowels. The frequency of the dejections and tormina were notably increased. A repetition of the extract to the extent of a grain

and a half, on the 26th, was followed by the same unpleasant results, which are controlled by exhibiting camphor and opium. The inference is that the extract given was unusually good, and that acrid as well as narcotic effects may result from this agent, when given in full doses. 28th. Frequent small mucous dejections without blood during the day; tormina diminished, tenesmus severe; other symptoms more favorable. *Nocte.* Consistent bilious dejections, rather profuse, set in, with increased tormina and tenesmus, and exacerbations of palpitation of the heart; no mucus or blood passed; tenderness of abdomen diminished; pulse yet feeble and irregular. 29th. Tormina much diminished; tenesmus frequent, with extrusion of mucus and blood in very small quantity; fibrinous tape-like bands, several inches long, observed in the dejections. Catamenia suspended. Flatulent eructations very distressing, with distension of the bowels and borborygmi; urine diminished, and high colored; dysuria. Palpitations of heart diminished, pulse feeble and irregular, ptyalism disappeared. Treatment, supporting and anodyne, mercurial and vegetable astringents ventured on, but now to be suspended, as they increased the sensation of abdominal distress. ℞.—Ol. amygdalæ dul. f℥i; aquæ lauro-cerasi f℥iij; aquæ pruni Virginianæ f℥i; syrup orgeat f℥ss; ol. terebinth. gtt. lx; tr. opii acet. gtt. lxx; aq. q. s. ad f℥iv. Sum. pro dos. coch. amp. no. ij, qq. tâ horâ. 30th. Some symptoms of yesterday, but diminished in degree; elongated fibrinous bands still appear in the dejections. *Nocte.* Irritative fever well marked, the track of the transverse arch and sigmoid flexure of the colon distinctly traceable through the abdominal walls, by their rigid tumidity, evincing plastic deposition in the walls of the bowel. Resumed mercurial treatment. ℞.—Mass. hydrarg. gr. xvj, opii gr. iv, in pil. no. vj. Sum. pil. j, qq. 3 tâ horâ. Renew vesication over the colon. Oct. 1st. Patient rested all night without being disturbed by call for dejection; three doses of the pills taken during the night; this morning has passed one black consistent dejection, moulded to the form of the bowels, and accompanied by about f℥ of pus, separated from the feculent matter. Ptyalism again noticed. *Vesper.* No dejection since morning. Treatment. Demulcents with animal jellies, and stimulants. 2d. No dejection during the night; irritative fever maintained in diminished degree; induration of the colon less apparent. *Vesper.* Sum. ol. ricini c. tr. opii. 3d. Laxative operated mildly during the night. 12 M. One consistent feculent dejection passed, followed by a small quantity of mucus, pus, and blood. 4th.

One dejection, the same as yesterday. Irritative fever noticed every evening; the daily dejection always accompanied by nausea. Pus continued to be present in the dejections until the 7th, and irritative fever continued. From that date slight gastric disturbance persisted until the 18th, when the patient recovered. The treatment after Oct. 3d, was doses of the nitrate of bismuth, with minute portions of opium. The disturbance of the heart in this case was wholly functional, and disappeared with the enteritic symptoms.

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(The general course of the symptoms of acute dysentery, as it occurs in this section of the West, corresponds with the description given by authorities of intertropical dysentery. The disease sometimes occurs as an epiphenomenon in our climatic remittent fevers, and is, when complicated, amenable to the curative effects of quinine. We intended to detail cases, illustrating this complication, and, also, to remark at length upon the pseudo-periodicity which sometimes marks the febrile symptoms of this and other acute diseases in our locality. By pseudo-periodicity, we mean that in many acute diseases, remission of the febrile symptoms is observed in the morning, with their exacerbation at night, yet such periodicity is not amenable to the antiperiodic operation of quinine. These topics we are compelled to neglect for the present. We must, also, pass over the description of dysentery in the infant subject, certainly the most interesting portion of the subject we have last taken up. It would, very properly, occupy an entire chapter, and we find that we have not the opportunity of completing our details of it.)

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(We find it utterly impossible to complete our report according to the plan, and in the manner we originally intended, and are compelled to close it abruptly, offering some remaining matter, with little regard to its arrangement, and without elaborating our intended disquisitions upon it. Many of the topics that have been scarcely more than briefly referred to in previous pages, we intended to examine deliberately, before closing the report, and to enlarge our discussion of them. A prominent object we held in view from the beginning was, in concluding our report on the diseases of the four years, to sum up the facts presented, and trace out positively the relations between the diseases prevalent in each year, and meteorologic causes supposed to influence them, this being the topic that could be most satisfactorily elaborated from the materials we have on hand. We regret that time will not admit of our carrying out

our original intentions. Another topic we are compelled to neglect, is the treatment of the diseases referred to in the report. The brief notice we have accorded this topic in different pages, is very far from satisfactory to us, and, we are fully aware, will be less satisfactory to our readers. We have, we earnestly hope, presented material that will enable others, more competent than ourselves, perhaps, to fulfil the task of elucidating the obscure etiology of our sectional diseases. The material will at least serve for a comparison that will indicate the relative prevalence of important epidemics in our own and other sections of the Union. To gather this material, and arrange it, even in the imperfect form in which we present it, has consumed much time, more, indeed, than we anticipated; to burrow for weeks, like a mole, unconscious of the light, amid a dead heap of dry leaves of musty mortuary records, is a service requiring patient labor, and which, with us, has for months past admitted of not an idle hour. This task we have fulfilled to the best of our ability, according to the time at our command, and the circumstances. The quiet labor of it has become almost a thing of habit with us, and we now turn from it with regret—with regret that the results we promised ourselves in the beginning have been so imperfectly attained, and with still more regret that the subject was not originally committed to abler hands than ours. The task has served to while away many an hour of a valetudinary period of our life, that, but for it, might have been passed with less profit and less pleasure, and we give it up at the last moment, to make final arrangements to go in search of that which it has been our humble endeavor to preserve for others—health.—R.)

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Addenda.—Among the prevalent diseases of this year should be noticed those of the cerebro-spinal system, which were in excess during the extreme heats of the summer. The weekly mortuary tables of these in subjects of five years and under, are all that we have time to present on this topic. They will be found on another page.

SUNSTROKE.—This subject, interesting and memorable in St. Louis, from its great mortality during the excessively hot summer of this year, we can give but a brief passing notice.

A circumstance connected with it, is the disparity of opinion that exists among physicians as to its precise nature and treatment. This results from the fact that two different morbid conditions are

included in the title "coup-de-soleil;" in the one, the prominent symptoms are insensibility, with pallor of the general surface, cold and relaxed state of the skin, oppressed breathing, and enfeebled action of the heart and arteries; in the other form, there is insensibility, but it is unattended with the signs of direct exhaustion that exist in the first. In the former class, the most prominent lesion of function, as manifested by the symptoms, is in the organs of respiration and circulation; there is congestion of the lungs, with consequent congestion of the brain; in the latter, the most prominent lesion is manifested in the cerebral functions; there is congestion of the brain, with a resulting oppression of the general circulatory functions, but not direct exhaustion of the vital powers. In the former, the pallid face, oppressed breathing, cold extremities, and feeble state of the heart's action, attest the nature of the disorder, and indicate the remedies to be used; in the latter, the state of the pulse, which is indicative of an oppressed, but not a depressed condition of the circulation, with the reddened lips, the injected capillaries of the face, the labored circulation of the great vessels of the neck, evince a different pathological state from the first form. In cases of the former kind, the cold dash, stimulating frictions of the extremities, the free application of sinapisms, of dry cupping, and, when the power of deglutition returns, the exhibition of diffusible stimuli, are the measures best adapted to obviate the existing morbid state; when reaction recurs, a different order of remedies is required. The cases of the second form are those which have given rise to the opinion that the disease is an apoplectic condition, and that depletion is the proper remedy. The concurrent opinion of many physicians who witnessed the disease frequently in the last hot summer, and among whom are the most accurate of our medical observers, is, that the cases then presented were instances of exhaustion from heat, with congestion of the lungs at the prominent lesion; on the other hand, the number who contend that the disease is apoplectiform in its incipiency, and who succeeded in its treatment by depletion, is very small, and the number of cases they saw comparatively few. The cases of the disease that occurred in the last summer, were not all traceable to direct insolation; the furnace tenders in engine-rooms, and bakers unexposed to the sun, were sometimes attacked. One case is reported to us of a female who had not been out of the house during the entire of a very hot day, being attacked. The excessive mortality by "sunstroke," during the last summer, is shown in the table follow-

ing; the number of cases that then occurred, we have been unable to discover.

The *furunculoid epidemic* deserves more than a mere passing notice, yet we are compelled to give but a brief reference to its form. It is an interesting circumstance, that the first notable general presence of this disease in St. Louis, was in the summer of 1849, immediately on the decline of the cholera epidemic, which in that year visited this section of country for the first time since 1833 or '34. Its prevalence in the succeeding years, 1850, 1851, and 1852, was not as extensive as it was in 1849. In 1853, it did not prevail, but in the succeeding year, it was more generally distributed than in any year since 1849. Its dissemination was not limited to the city; in St. Louis County, it prevailed in the above years, and in 1854, it was generally distributed through St. Louis, and the adjoining counties of Franklin, Washington, St. Genevieve, St. Francois, and Madison. Of its existence in other portions of the State, we have no explicit information, although a few communications received by us imply its prevalence, by the fact referred to of the occurrence of non-febrile cutaneous eruptions in two of the summers of the years above named, and the remark is appended that these eruptions originated during, or immediately succeeding, the prevalence of cholera. Its occurrence in 1854, may be plausibly traced to the excessive heat of the summer, a view sustained by the fact that it was, in many cases, a supervention upon "lichen tropicus," to which almost every one was then subject. The most common form of the disease was the simple furuncle, which was distributed, in most cases, upon the nucha, the scapular regions, or on the buttock. In many subjects, the axilla was a favorite location of the eruption. This was the form most frequently superadded to "lichen tropicus." In many, however, the form of the disease was paronychia, which occurred generally without the lichen. In some cases, the disease was intermediate between furuncle and anthrax (furunculus anthracoides); in a few, it presented the signs of well-marked sloughing anthrax. In the cases of simple furuncle, which constituted the largest proportion of those presented each year, there was seldom any constitutional disturbance, except where the eruption was on the face, then the tension and œdematous swelling, extending to some distance around the tumors, would be distressing, and cephalalgia, with fever, attended. In axillary furuncle, which would at first be superficial, the adjacent lymphatics finally became involved, when constitutional disturb-

ance would be very marked. In some subjects, the disease was exclusively simple furuncle, detachments of three or four of which would be presented on the neck, perhaps; these would be subsiding, when another series would occur on the back, or on the front of the chest, or on the gluteal regions, or on the posterior or inner surface of the thighs. In others, furuncle would be limited to the body, while one or more paronychiæ would attack the fingers. In one subject, a German female, we incised an anthracoid furuncle, on the anterior aspect of the right forearm, Sept. 20, 1854. Within two weeks previously, she had been attacked successively with five paronychiæ on the annular and index fingers and thumb of the left hand, and the middle finger and palm portion of the right. In July, last year, we saw many cases at St. Genevieve, among negroes, where a majority of the fingers were in turn attacked by paronychiæ. At the Pilot Knob Iron Works, during August and September, more than one-third of the workmen were, for a time, disabled by these digital inflammations. The form of furuncle was common to both children and adults, that of paronychiæ, to adults alone. The period of the year to which the epidemic was limited, comprised the months of July, August, September. At the time of writing (May, 1855), the disorder exists to some extent in St. Louis, in company with detached cases of cholera, and of its congeners, diarrhœa and dysentery. Prevalent with these are, also, measles and scarlatina, sparsely distributed, and, in some notable instances, intercurrent, or rather interfused, one with the other, in the same subject; in addition, there is now just passing away, the lingering train of an outbreak of parotitis, which prevailed rather generally in the months of January, February, and March.

Erythema Papulata.—In the month of May, this disorder was somewhat generally distributed through the city, together with detached cases of scarlatina and measles. The first cases that occurred under our observation were all in one family, being the entire of the children of the household, two being whites and three blacks. We give a brief notice of these from our weekly record of cases.

May 11th. First cases of erythema papulata noticed by us were seen to-day. Other cases have been reported in the city. The cases in our practice are C. M., aged 11 years; her sister, aged three years, and three negro children, females, in the house, aged 13, 11, and an infant. May 19th. A. V. (female), aged 12 years, cousin of the first subject above named, attacked with erythema. The symptoms in all of these cases were the same. There was scarcely more

than malaise as the precursory symptom; febricula then occurred, and papulæ became apparent; the tongue was thinly coated with white fur; erythema affected the fauces and the surface. There was very slight tumidity of the tonsils and adjacent internal structures, with little swelling of the submaxillary glands. In the last-named case, A. V., these symptoms continued until the 24th May. The erythema, in this, as in other cases, was fleeting. It appeared on the 19th in this case; at one hour it would be fully displayed, at another, it would appear to fade and again reappear; it was most marked and persistent on the 22d and 23d, and disappeared on the 24th. It was principally distributed over the back and face, and but little over the trunk of the body or over the extremities. In the height of the disorder, the hand passed over the eruption received the impression of roughness, as in urticaria, and, at times, when the eruption temporarily faded, the erythema was like white urticaria, or that stage of the affection when the redness passes off, leaving a whitish, pallid buff eruption in elevated patches. Upon the erythema, papulæ were dispersed, small and pallid like the papulæ of miliaria, but broader at their base, and not presenting vesicles as in miliaria. The eruption, concisely described, consisted of irregularly sized patches of fleeting erythema with elevation of the surface, over which distinct pallid papulæ were scattered. We noticed no enlargement of the papillæ of the tongue in the disorder, nor yet catarrhal symptoms. The other cases we witnessed, presented the same succession of symptoms as the one described. The distinctive features of the disorder, when compared with scarlatina, were the fleeting character of the erythema, the non-coalescing state of the patches, the papula appearing before the efflorescence, the tongue not presenting the elongated red papillæ, the invariably mild character of the general symptoms, and the febricula and eruption being synchronous in their evolution. The last cases occurring under our notice were attacked May 30th, and presented the symptoms above described, except that diarrhœa was a complication. The cases previously noticed were unattended with diarrhœa. The subjects attacked were from 4 months to 14 years of age. Two cases, the female cousins of the subject whose case we have detailed, were attacked about May 26th, with the disorder which was then pronounced scarlatina; ten days later, both were attacked with well-marked anginose scarlatina, rather severe in its form. The diagnosis in these cases was pronounced by a disciple of Hahnemann.

JAUNDICE.—One of the marked peculiarities of the close of this year as regarded disease, was the unusual prevalence of jaundice. This was remarked chiefly in October and November. The case was simply cholæmia, scarcely of a febrile type, attended with loss of appetite, torpor of the bowels, pallid alvine dejections, vertigo and occasionally headache, and generally with slow pulse and fulness in the right hypochondrium. The disorder yielded readily to the usual remedies for it. At the meeting of the Medical Society, Dec. 9th, the unusual prevalence of the disorder was the subject of remark; 120 cases were then enumerated as occurring in the practice of the members present.

NURSING SORE-MOUTH.—Cases of this disorder were reported in St. Louis in December, 1854, and January and February, 1855. From information given us, we learn that the disorder was intractable, diarrhœa usually accompanied the stomatitis; in some cases there was tenderness of the præcordia, with other signs of subacute gastritis. Irritative fever was attendant on it, and, in some subjects, the secretion of milk was suspended. In all, anæmia and emaciation soon became more or less marked. These cases, which were somewhat numerous, are the first of the disease that we have ever known in St. Louis.

Progress of Cholera beyond the limits of St. Louis County.

Limited local irruptions of this disease were distributed far and wide in the different counties of the State in this year; but no general outbreak of the disease occurred, except at Jefferson City, in Cole County, and at Hermann, in Gasconade County.

Between the 15th and 23d of June, the disease prevailed at Independence, Jackson County, 30 deaths occurring in that week.

In Harrisonville and the vicinity, in Cass County, about 200 miles due west of St. Louis, near the western border of the State, it prevailed from July 1st to 24th. 28 died in the village, and 10 in the neighboring district.

Brunswick, in Chariton County, was visited by the disease at the same time as Independence.

In Richfield, a village in Clay County, an outbreak occurred in the last week in May; 14 deaths were reported in the one week, when the disease disappeared. At Lime Creek, Osage County, cases were reported in the early part of June.

The heaviest visitations in the interior, occurred in Jefferson

City and Hermann. The particulars of the outbreak at Jefferson we are unable to state, further than that the disease raged chiefly among the railroad laborers, during the month of June. The visitation at Hermann is referred to in the extracts from Dr. Nassee's communication, which we subjoin.

Scattering, but limited outbreaks of the disease occurred during July, in St. Genevieve, and the surrounding counties, on or near the Mississippi River; in short, it distributed itself in small detached outbreaks in nearly all the counties on the Mississippi and Missouri Rivers, during its greater prevalence in St. Louis.

Gasconade County.—The visitation of cholera in this section is referred to in the following extracts from a communication sent us by Dr. Nassee.

On the 7th of June, three immigrant families arrived at Hermann, from Germany, numbering 19 persons, all robust peasants. Being uncleanly in their habits, and intemperate, they appeared nevertheless to have well sustained their long sea voyage. On their arrival in Hermann, owing to the scarcity of tenements, seventeen were quartered in one room; and when thus domiciliated, they proceeded to unpack their clothing, and submit it to the needed process of washing, the first ablution it had received since the commencement of their voyage. Suddenly, on the 17th of June, and without any premonitory stage, malignant cholera broke out in these families; and in spite of every effort to prevent it, fourteen of the number died of the disease. Other cases appeared in quick succession through the town; and, as the epidemic advanced, out of 300 houses, in which there was a population of about 1300 souls, scarcely ten escaped a visitation. Towards the close of June, and in the early part of July, the disease became markedly intermittent, and was then less fatal. About this time, we indulged the hope that the disease would subside, but it renewed its attack with more vigor than before, and its results were the more fatal from the scarcity of medical aid, the physicians of the place, with one exception, being incapacitated by illness from attending to their service. The visitation had hitherto been confined to Hermann, but it now invaded the adjoining precincts in the county with such malignancy, that few recoveries occurred. It diminished towards the close of August, and entirely disappeared after a severe thunderstorm in September, excepting some cases amongst the laborers on the railroad.

As before remarked, the disease was in its start very malignant;

subsequently, it assumed an intermittent type, and then became more manageable. The symptoms were, as usual, coldness of the surface, oppression, anxiety, distress in the præcordia, copious purging of a whey-like fluid with flocculi mixed, vomiting of the same, the ejections being almost without effort. The countenance was senile, pale, and livid; the eyes were sunken and surrounded by dark rings; the skin became purple, or nearly black, and was shrivelled, doughy, inelastic and clammy; the lips and nails were purple or black; the tongue was pallid, cold, sometimes lead-colored, or as if covered with a layer of farina; the voice hoarse, low, and hollow (vox cholerica), respiration low and much oppressed, with frequent suspiration and great general anxiety; there were thirst and agonizing cramps of the extremities, with pulselessness, &c. These symptoms were more or less marked in all cases; their intermittent character was, in some, very marked.

My treatment was guided by the character of the individual cases. That which I found most efficient was the exhibition of an emetic of the oxymel of squills, selecting this by reason of its diuretic property. Should this fail to change the character of the matters vomited, I then gave the supercarbonate of soda, and ordered barley-water to be used freely as a drink. At the same time, I directed stimulating frictions, and the free application of mustard or capsicum generally, and the use of ice to the stomach. By these means the first storm was averted, the vomiting controlled, the alvine dejections became colored, the urine was secreted, respiration was less oppressed, and reaction occurred. But another paroxysm was to be apprehended, which it became a paramount object to avoid; to which end I directed quiniæ sulph. gr. xv, p. opii gr. v, p. camphor ʒij, in dos. xij; sum. dos. i, quâque horâ. These were given with the infusion of mint, and the succeeding paroxysm that threatened was thus usually anticipated. The subsequent treatment consisted of the exhibition of the aromatic bitters. This was the general treatment I adopted, which was occasionally modified to meet the exigency of particular cases.

It was remarked that females were predisposed to the epidemic, and particularly at the menstrual period; whereas, in the visitation of 1849, male subjects were more liable to the disease. The mortality from the disease was, in this year, greater among children than in 1849.

Dysentery.—"Cholera had scarcely disappeared, when dysentery broke out to an alarming extent. The symptoms usually

were tormina, tenesmus, chilliness, often protracted; in a short time the patient would become weak, pale, giddy, and anxious; the pulse would be small and frequent; the stools, *slimy* at first, afterwards became very frequent, sanguine and mucous; strangury and prolapsus ani were often observed." (The description of the disease given by Dr. N., is that of the malignant form of intertropical dysentery. The treatment he found most successful, was the exhibition at first of an emetic of ipecacuanha, followed by saline laxatives, the laxative preferred being the supertartrate of potash exhibited in demulcent drinks. He remarks: "I have often repeated the laxatives on the fifth and sixth days, allowing diluents in the interval. With this treatment, recovery was generally prompt, whereas the treatment by opium and other astringents, usually resulted in lingering recovery, if recovery occurred. Prior experience had taught me that opium in this disease is more hurtful than beneficial.")

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Mortality by Typhoid Fever in St. Louis, 1854.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
5 years and under	2	..	1	..	..	..	..	1	1	..	..	..	1	..	..	..	1	..	..	..	1	..	..	1	7	2	9
5 to 10 y'rs	..	1	1	..	..	1	..	..	3	1	1	..	..	..	2	..	..	..	..	1	1	..	..	1	8	5	13
10 " 20 "	..	2	1	1	..	2	..	2	..	..	..	..	2	3	1	4	1	1	2	2	1	1	..	..	8	18	26
20 " 30 "	1	1	1	..	1	..	7	2	3	1	3	2	10	2	7	6	8	1	3	2	3	3	2	..	49	20	69
30 " 40 "	..	..	4	..	1	..	3	..	5	1	2	1	6	1	7	3	8	..	2	2	2	..	2	1	42	9	51
40 " 50 "	1	..	..	..	..	..	1	..	..	..	1	2	..	..	3	..	4	..	1	..	1	..	1	..	13	2	15
50 " 60 "	1	1	2	..	2	..	1	..	..	..	1	..	1	..	1	1	1	1	2	..	1	..	..	..	13	3	16
60 and over	..	..	..	1	1	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	2	3	5
Total	5	5	10	2	5	3	13	5	12	3	8	5	20	6	21	14	23	4	10	7	10	5	5	3	142	63	204

Mortality by Typhus Fever in St. Louis, 1854.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
5 years and under	..	..	..	..	1	1	..	..	..	1	2	..	..	1	1	..	2	..	1	..	..	..	..	..	7	3	10
5 to 10 y'rs	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	3	3	6
10 " 20 "	..	..	..	..	1	..	..	..	3	..	1	..	..	..	1	1	1	..	..	1	..	1	..	..	7	3	10
20 " 30 "	..	1	..	..	..	1	..	..	3	2	1	..	5	3	..	..	1	1	3	1	..	..	2	1	15	10	25
30 " 40 "	1	..	2	..	..	..	1	..	..	..	..	..	1	..	3	1	1	1	3	..	1	1	1	..	14	3	17
40 " 50 "	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	1	2	4	6
50 " 60 "	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
60 and over	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	2	..	2
Total	1	1	3	1	3	4	1	2	7	3	4	..	6	4	5	3	5	2	8	2	2	2	6	2	51	26	77

Mortality by Bilious Fever in St. Louis, 1854.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
5 years and under	..	..	..	..	..	..	1	..	..	1	2	..	3	3	2	1	..	..	..	..	..	..	..	..	8	5	13
5 to 10 yrs.	..	..	..	..	..	..	..	..	1	..	..	..	..	1	2	..	1	..	1	1	..	..	..	..	5	2	7
10 " 20 "	..	..	..	..	..	..	..	..	..	..	1	3	..	2	1	1	..	1	..	..	..	..	1	..	3	7	10
20 " 30 "	..	..	..	..	..	..	..	1	1	1	2	2	6	2	4	5	7	2	..	..	2	1	1	..	23	14	37
30 " 40 "	2	1	..	..	..	..	..	..	..	..	4	..	5	2	8	1	7	1	1	1	..	..	1	..	28	6	34
40 " 50 "	1	..	..	..	..	..	..	..	..	..	..	1	2	1	1	..	2	2	..	1	1	..	2	..	9	5	14
50 " 60 "	..	..	..	..	..	..	..	..	..	..	1	..	1	2	..	..	..	..	1	..	..	..	..	..	3	2	5
60 and over	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1
Total	3	1	..	..	..	..	1	1	2	2	10	6	17	14	18	8	17	6	3	3	3	1	5	..	79	42	121

Mortality by Intermittent Fever in St. Louis, in 1854.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
5 years and under	..	..	..	..	..	..	..	1	..	..	2	..	2	1	1	..	..	..	1	1	1	..	..	..	8	2	10
5 to 10 yrs.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	2	..	2
10 " 20 "	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1	1	..	..	..	..	..	..	1	3	4
20 " 30 "	..	..	..	..	1	..	1	..	..	..	1	..	1	1	2	3	1	1	2	1	..	..	..	..	9	6	15
30 " 40 "	1	..	..	..	..	..	..	..	..	..	2	..	..	..	4	..	..	1	1	..	1	1	..	..	9	2	11
40 " 50 "	..	..	1	..	..	1	1	..	..	..	..	..	1	..	1	..	1	2	..	..	..	..	..	..	5	3	8
50 " 60 "	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	4	..	4
60 and over	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	2	..	2
Total	2	..	2	1	1	1	2	1	..	..	5	..	4	3	10	3	5	5	4	2	4	1	..	..	40	16	56

In the above are included all reported under the term "congestive fever." The mortality by climatic fevers in this year falls much below that of other years.

Report of the Cases of Cholera among the Immigrants landed at Quarantine Island, St. Louis, 1854. By F. P. LEAVENWORTH, M. D.

Nativity of subjects.	Sex.	Age.	Date of arrival.	Date of discharge.	Form of disease.	RESULT AND REMARKS.
Bohemia	F.	27	Feb. 12	Feb. 12	Cholera	Died 2 hours after landing.
"	"	23	12	14	"	"
Germany	"	29	12	21	"	Recovered.
"	"	4	14	Mar. 3	Cholerine	Died. Father and mother, with 5 children, died on voyage up on the boat; one other recovered at quarantine.
Kentucky	M.	28	15	Feb. 18	"	Recovered.
Germany	"	22	15	22	Cholera	Died.
"	F.	48	15	16	"	"
"	M.	40	15	16	"	"
"	"	48	15	19	"	"
"	F.	5	15	16	"	"
"	"	35	15	21	"	Recovered. Delivered prematurely on 16th.
"	"	26	17	26	Cholerine	"
"	M.	12	19	22	Cholera	Recovered. Convalescing when discharged.
"	F.	34	21	21	"	Died. Survived 1 hour after admission. Delivered on 17th.
"	"	3	21	23	Cholerine	Died. Daughter of previous subject.
"	"	62	21	21	Cholera	Died in 2 hours.
"	M.	27	21	23	Cholerine	Recovered.
"	F.	22	24	24	Cholera	Died.
Denmark	"	29	Mar. 11	Mar. 13	"	"
"	"	41	11	12	"	"
"	"	35	11	16	"	" } Mother and son. { Mormon immigrants.
"	M.	9	11	12	"	"
"	F.	40	11	12	"	"
"	"	35	11	13	"	"
Germany	"	40	19	20	"	"
"	"	30	19	April 13	"	" of relapse. Miscarried March 21st.
"	"	9	19	13	"	Recovered. Daughter of foregoing.
England	"	13	31	Mar. 31	"	Died in 1 hour.
Wales	"	32	31	31	"	"
Ireland	"	28	April 10	April 14	"	"
N. Jersey	M.	14	12	17	"	" Father landed a corpse.
Penn.	"	6	May 10	May 10	"	" }
"	"	42	6	12	"	" } One family.
"	"	4	10	14	"	" }
Germany	"	15	6	11	"	" in consecutive fever.
"	"	13	6	7	"	"
"	F.	49	6	11	"	"
"	"	51	6	11	"	"
"	"	26	6	11	"	"
"	M.	3	6	8	"	"
"	"		6	6	"	" in 1 hour.
"	F.	26	8	11	"	"
England	"	27	7	7	"	"
"	"	47	8	8	"	"
Germany	"	20	10	June 20	"	Recovered.
"	"	56	10	May 11	"	Died.
"	"	8	10	10	"	" within 1 hour.
"	M.	3	10	12	"	" } Brother
"	F.	8	10	12	"	" } and sister.
"	"	2	11	11	"	"
"	M.	46	11	11	"	Died.
"	"	17	11	17	"	Recovered.
"	"	14	11	11	"	Died.
"	"	50	11	19	"	"

Report of the Cases of Cholera among Immigrants at St. Louis—Continued.

Nativity of subjects.	Sex.	Age.	Date of arrival.	Date of discharge.	Form of disease.	RESULT AND REMARKS.
Germany	M.	37	May 11	May 17	Cholera	Died.
"	F.	5	11	21	"	Recovered.
Penn.	M.	8	13	13	"	Died.
Germany	"	21	14	16	"	"
Italy	F.	21	14	14	"	" in a few minutes.
England	"	13	15	15	"	" Was taken at quarantine, died in 5 hours.
"	"	27	16	16	"	Died.
"	"	49	16	17	"	" Son died of diarrhœa.
"	"	54	16	17	"	"
"	"	24	18	24	"	"
Italy	"	6	18	18	"	"
Germany	M.	25	June 3	June 11	"	Recovered.
"	"	32	3	11	"	" } Husband
"	F.	32	3	8	Cholerine	" } and wife.
"	M.	46	3	15	"	Recovered.
"	F.	29	3	6	Cholera	Died.
"	M.	3	3	4	"	"
"	"	52	3	8	"	" } Both of same
"	F.	21	3	8	"	" } family.
"	"	6	3	12	Cholerine	Recovered.
"	"	11	3	3	Cholera	Died.
"	M.	2	3	4	"	"
"	F.	30	3	8	"	"
"	M.	5	3	9	Cholerine	"
"	"	3	3	14	"	Recovered.
"	"	45	3	4	Cholera	Died. Father of foregoing.
"	F.	9	3	4	"	"
"	M.	21	3	4	"	"
"	"	6	3	5	"	"
"	"	47	5	10	Cholerine	"
"	F.	34	5	6	Cholera	"
France	M.	8	5	15	Cholerine	"
"	F.	43	5	11	Cholera	"
Germany	M.	14	5	5	"	"
"	"	34	8	8	"	" a few minutes after arrival.
France	"	28	8	8	"	" " " "
Germany	F.	46	8	8	"	"
"	"	35	8	11	"	"
"	"	55	8	11	"	"
"	"	26	8	12	Cholerine	Recovered.
"	"	34	8	10	Cholera	Died.
"	"	3	8	16	"	Recovered.
"	M.	25	8	11	"	Died.
"	"	18	8	13	Cholerine	Recovered.
"	"	34	8	10	Cholera	Died.
"	"	19	8	14	"	"
"	F.	48	8	8	"	"
"	M.	48	8	8	"	"
England	F.	23	10	18	Cholerine	Recovered.
"	M.	65	10	11	Cholera	Died.
Germany	"	50	10	19	Cholerine	Recovered.
England	F.	35	10	14	"	"
"	"	28	10	12	Cholera	Died.
"	M.	63	10	14	Cholerine	Recovered.
Germany	F.	21	10	13	"	"
"	"	23	10	14	"	"
"	"	33	10	14	"	"
"	"	20	10	14	"	"
"	M.	50	10	14	"	"
"	"	25	10	14	"	"
"	"	35	10	14	"	Died.
"	"	33	10	19	"	Recovered.

Report of the Cases of Cholera among Immigrants at St. Louis—Continued.

Nativity of subjects.	Sex.	Age.	Date of arrival.	Date of discharge.	Form of disease.	RESULT AND REMARKS.
Germany	M.	23	June 10	June 14	Cholerine	Recovered.
England	F.	32	12	July 21	Cholera	"
Germany	M.	10	11	June 15	"	"
"	F.	6	11	12	"	Died. } Members of one
"	"	8	11	11	"	" } family.
"	"	3	11	11	"	" }
"	"	25	11	21	Cholerine	Recovered.
"	M.	25	11	20	"	"
"	"	16	11	24	"	"
France	"	6	11		Cholera	Removed by friends.
"	"	54	13	13	"	Died. Survived 1 hour after admission.
Germany	F.	40	15	17	"	Died.
"	"	48	15	18	"	"
"	"	25	15	21	Cholerine	Recovered.
"	M.	4	15	18	"	Died. Son of last.
"	"	40	15	25	"	Recovered.
"	"	54	15	26	"	Died.
"	"	54	16	17	"	Recovered.
"	"	40	16	29	"	"
"	F.	40	16	29	"	"
"	"	48	16	21	"	"
"	M.	4	16	21	"	"
"	"	29	22	July 6	"	"
France	F.	10	22	June 22	Cholera	Died.
England	"	38	25	26	Cholerine	" Delivered on 26th.
"	M.		25	27	Cholera	Died. Infant of foregoing. Symptoms well marked.
"	F.	8	28	28	"	Died. Same family as last.
"	M.	6	28	July 2	Cholerine	Recov'd. " " } Attacked after
"	F.	2	29	June 30	Cholera	Died. " " } landing.
"	M.	5	28	28	"	"
"	F.	64	29	29	"	"
"	M.	54	29	July 19	"	Recovered.
Ireland	F.	30	July 8	11	Cholerine	"
Germany	M.	40	8	12	"	"
"	F.	84	6	6	Cholera	Died.
"	"	44	6	15	"	Recovered.
"	"	23	6	13	"	"
"	M.	54	6	15	"	"
"	F.	27	12	23	Cholerine	"
"	M.	27	12	17	"	Died.
"	"	40	12	20	Cholera	"
"	"	34	Aug. 31	Sept. 5	"	" } Disease succeeded intermit-
"	F.	36	31	5	"	" } tent fever. Foregoing were husband and wife. Their two children were admitted, one a corpse, the other laboring under intermittent fever.
"	M.	30	Sept. 6	8	"	Died.
Ireland	"	11	Oct. 8	Oct. 8	"	"
Germany	"	23	31	31	"	"
Ireland	"	35	Nov. 4		"	Died on S. B.
"	F.	28	5	Nov. 8	"	Died.[1]
Illinois	"	42	16	18	"	"
Germany	M.	19	16	25	"	Recovered.
"	"	50	28	28	"	Died.
"	"	57	Dec. 1	Dec. 6	Cholerine	Recovered.
"	"	24	1	6	"	"
Ireland	F.	20	6	9	Cholera	Died.
Germany	"	21	16		"	Recovered.

[1] This subject miscarried.

Report of the Cases of Diarrhœa and Dysentery among the Immigrants at Quarantine, St. Louis, 1854.

Nativity of subjects.	Sex.	Age.	Date of arrival.	Date of discharge.	Form of disease.	RESULT AND REMARKS.
Bohemia	F.	2	Feb. 12	Feb. 12	Diarrhœa	Died.
Germany	"	1	12	16	"	"
"	"	30	12	21	"	" of phthisis: Delivered at Q.
"	M.	47	21	23	"	Recovered.
Ireland	"	66	Mar. 20	22	"	"
Wales	"	5	31	April 2	"	Died. Mother died of cholera, March 31.
Germany	"	19	April 29	May 3	"	Recovered.
"	"	33	May 2	8	"	"
"	"	30	2	11	"	Died.
England	F.	23	5	10	"	Recovered. }
"	"	21	5	10	"	"
"	M.	44	5	10	"	"
"	F.	34	5	10	"	" } Mormon immigrants.
"	M.	28	5	10	"	"
"	"	3	8	11	"	Died. }
Switzerland	F.	10	7	10	Chronic diarrhœa	"
"	M.	57	7	10	Diarrhœa	Recovered. Father of previous subject.
Pennsyl'nia	"	2	11	12	"	Died. } Of one family.
"	F.	13	13	30	"	Recovered. }
England	M.	16	16	20	"	"
"	"	6	18	23	"	"
Italy	"	53	19	21	"	"
Germany	"	2	20	21	"	"
"	F.	29	22	30	"	" Aborted on 22d.
Maine	M.	22	24	30	"	"
Germany	"	5	28	30	"	"
"	F.	38	June 4	June 14	"	"
"	M.	25	3	8	"	"
"	"	52	5	8	"	"
France	"	35	5	6	"	"
Germany	F.	3	8	18	"	"
"	M.	2	8	10	"	Recovered. } Of same family.
"	F.	3	8	9	"	Died. }
England	"	60	12	14	"	Recovered.
"	"	12	28	29	"	" }
"	"	6	28	29	"	" } Of one family.
"	"	4	28	29	"	" }
Germany	M.	33	Aug. 28	Sept. 15	"	"
Ireland	F.	5	Oct. 8	Oct. 12	"	"
Germany	M.	26	15	23	Dysentery	Died.
"	"	13	Nov. 7	Nov. 9	Diarrhœa	Recovered.
"	F.	16	Dec. 1	Dec. 6	"	" }
"	M.	10	1	6	"	" } All of one family.
"	F.	8	1	6	"	" }
"	M.	32	8	12	"	"

General Report of the Cases of Disease among Immigrants at Quarantine, St. Louis, in 1854, *not included in previous statements.*

Nativity of subjects.	Sex.	Age.	Date of arrival.	Date of discharge.	Form of disease.	RESULT AND REMARKS.
Germany	F.	30	Feb. 12	Feb. 21	Phthisis	Died.
"	"	30	21	Mar. 17	Cystitis	Recovered. Aborted, March 2.
U. States	M.	25	28	18	Remittent fever	" (By remittent, in this and other reports, is meant bilious fever.)
Germany	"	25	28	April 4	Typhus fever	Recovered.
U. States	"	25	28	Mar. 24	Rheumatism	"
England	"	7	May 14	May 18	Typhoid fever	" Convalescent on arrival.
Ireland	F.	7	31	Aug. 28	Typhus fever	"
England	M.	35	June 1	July 1	Scorbutus	"
U. States	"	47	1	June 12	Dropsy	Died.
England	"	42	8	14	Intermittent fever	Recovered.
Germany	"	23	20	27	Typhoid fever	Died.
"	"	33	20	July 2	"	Recovered.
"	"	23	21	June 30	Remittent fever	"
Ireland	"	40	25	30	Intermittent fever	"
Germany	F.		July 6		Variola	Removed to Smallpox Hospital.
"	"		6		"	" "
Virginia	M.	40	Aug. 15	Aug. 25	Yellow fever	Recovered.
Ireland	"	28	19	25	Intermittent fever	"
Germany	"	28	24	25	Fever	Died.
"	"	42	31	Sept. 16	Intermittent fever	Recovered. } Of one family,
"	"	38	31	16	"	" } complicated
"	F.	3	31	4	"	Died. } with diarrhœa.
"	M.	34	31	5	"	Died of cholera supervening.
"	F.	36	31	5	"	" " wife of last.
"	M.	10	Sept. 6	16	"	Recov'd. Child of last couple.
"	F.	5	4	16	"	Recovered. Complicated with diarrhœa.
Ireland	M.	23	6	8	"	Recovered.
England	"	19	6	8	Yellow fever	Died.
Scotland	"	25	9	Oct. 3	Remittent fever	Recovered.
Illinois	"	25	19	Sept. 19	Fever	Died.
Hungary	"	37	20	Oct. 7	Yellow fever	Recovered.
Germany	"	4	27	25	"	"
Ireland	"	35	Oct. 4	4	"	Died.
"	"	45	12	15	Remittent fever	"
Ohio	"	11	14	Nov. 2	"	Recovered.
Ireland	"	22	15	Oct. 17	"	" Convalescent on arrival.
U. States	"	23	25	Nov. 15	"	Recovered.
Ireland	"	29	28		Fracture	Removed to City Hospital.
Germany	"	4	31		Variola	" Smallpox Hosp.
Missouri	"	30	Dec. 13	Dec. 14	Chagres fever	Died. Returned Californian.
Germany	F.	16	13		Typhoid fever	Recovered. Convalescent.
Ireland	M.	A	dult 14		Variola	Removed to Smallpox Hosp.
Negro	"	"	19		"	" "

The term *cholerine*, as used in the foregoing reports, is applied to cases in which the tendency to collapse is not very rapid or intense. It is, strictly, cholera, except insomuch as the tendency to death is not imminent. We suspect that the generality of cases of cholera

reported as cured, in localities beyond quarantine, are such as those to which we have applied the term cholerine.

Of the yellow fever cases above reported, but three had black vomit; all reported had exudation of dark blood from the mouth or nostrils. The cases of "remittent fever" reported mean ordinary bilious fever. The cases of Californian emigrants noted as remittent or Chagres fever, were of disease contracted in crossing the Isthmus, a low form of remittent, but without sordes or typhoid appearances, other than debility or hebetude. The subjects would sink gradually, almost without complaint.

The entire report for the year, as to quarantine, shows how completely one epidemic disease, and its congeners, will prevail to the exclusion of other diseases.

During this year, 24 corpses were landed on the island from different boats.

The following communication is from S. Pollak, M. D., Attending Physician at the Belcher Dispensary. We are compelled to omit the detailed register, to which Dr. P. refers:—

"In compliance with your request, I furnish you with an abstract of the register of cases of the Belcher Dispensary for 1854.

"The Belcher Dispensary was established in February, 1849, for the exclusive use of the operators of the "St. Louis Steam Sugar Refinery" of Belcher & Bro. Only the operators who continue at work, are entitled to its benefits; absentees from their post are excluded.

"I sincerely regret not having kept a regular journal from the beginning. I only had small memorandums, wherein I entered, daily, all applicants; noted the diagnosis, age, treatment, etc., with pencil; but only with the view to assist my memory. These notes were intelligible, and of utility only to myself. Some of them are yet on hand, but more are missing. They are greatly defaced, stained, and not in regular succession, so that I cannot give any reliable data from them. This year I have got a regular register, with columns for name, date, age, birthplace, diagnosis, treatment, and remarks. It is carefully and conscientiously kept, and, at a glance, all statistical data can be obtained. Next year I contemplate appending a meteorological register, and a column for the length of residence in the United States, of respective patients. I will keep the register yet a few days in my office, subject to your inspection, if desirable.

"You will find that 1,694 patients have been treated in the

Belcher Dispensary in 1853 and 1854, as per register. Not a case of death has occurred among them. This is not stated in a spirit of boasting, but as the necessary result of the rules of the institution, as only such applicants are registered who are able to continue work. That of the absentees some died, you can readily imagine; but, as stated, among the registered cases no death occurred. With but few exceptions, the result of treatment was generally favorable. Some of the chronic cases were only palliated, some radically cured. Of the acute cases, nineteen-twentieths were cured; only very few left to seek medical aid elsewhere.

"One important fact I succeeded to establish, in that charity, beyond any cavil or doubt, and that is the almost specific effect of sulphuric acid in all cases of diarrhœa. I say in *all* cases of diarrhœa, and in diarrhœa only, for I hold it is less reliable and even frequently injurious in dysentery.

"The register shows that, in 1854, 374 cases of diarrhœa were prescribed for, of which 302 were cured by the sulphuric acid alone, with the exception of some adjuvant and corrigent, such as simple syrup, aromatic tincture, or camphor water. With the other cases, the sulph. acid had to be ultimately resorted to; but it was preceded by some mild cathartic, to clean out the primæ viæ, such as hyd. cum cretâ, rheum, ol. ricini, and then followed up with the sulph. acid. Opium, such as in pulv. Doveri, was only given when combined with any of the above-named cathartics, but never otherwise.

"The majority of cases were cured in 24 to 48 hours; few required the use of it for four days, and only a very small number took it as long as eight days; they got nothing else, and were cured.

"I here boldly declare that, according to my experience, sulphate of quinia does not more certainly arrest an attack of intermittent fever than the sulphuric acid an attack of diarrhœa. I found it equally efficacious in all stages of the disease, both acute and chronic; in all ages and sexes, abundant evidence of it I had in my private practice.

"I intend here to limit myself merely to a report of the operations of the Belcher Dispensary. Were I permitted to draw upon the note-book of my private practice—and I dare not withhold the fact—I could successfully prove that in the much and justly dreaded summer-complaint of children, in cholera infantum it is much preferable to the mercurial, chalk, astringent, and opium treatment; it is even more rapid and more positive in its effect with children than with adults.

"Also in *cholera asphyxia*, I found it more efficacious and more prompt in its action, than any other remedy I ever tried or heard of. It answered all my expectations and all my purposes, up to the state of collapse; when, it is generally conceded, it is a mere chance, if a patient gets over it.

"The usual dose with me for adults, was ʒss of the acidum sulphuricum aromaticum every 4 hours, 4–8 doses generally sufficed to effect a cure. The following is my almost stereotyped formula: ℞.—Acid. sulph. arom. ʒss; tinct. cardamomi comp. (or sp. lavandulæ comp.), syrupi simpl., āā ʒi. S.—Every 2 hours 2 tablespoonfuls. If there be tormina, feeble pulse, general prostration, I added aq. camphoræ ʒj, and gave it in shorter intervals.

"The first dose is almost invariably ejected, probably from its suddenly astringing the stomach. I then ordered iced water to drink *ad libitum*, in order to soothe and distend mechanically the stomach; had the dose repeated immediately, and have never seen it returned afterwards.

"The gratification of the patient in being permitted, nay ordered to drink much cold water, is alone sufficient to recommend it to general favor, both with physician and patient.

"Without pretending to give the rationale of the action of the sulph. acid, I may be permitted to say, that I presume it acts more, if not chiefly, by increasing the tone of the mucous membrane of the alimentary canal, and not merely by astringing its pores. It appears to produce rapidly a tonic, astringent, and alterative effect. The patient rallies soon, the evacuations of the bowels diminish in frequency and improve entirely in character.

"The light-colored watery evacuations are mostly checked after the 3d or 4th dose, and bilious, more consistent fecal stools take their place; and not rarely were the bowels constipated for the next 2–3 days, and required a dose of oil to be relieved.

"On some future occasion, I will attempt to detail a few cases, selected from the Register and my note-book.

"To find a substitute for the costly sulphate of quinine in intermittent fevers, has greatly engrossed my attention. I did not allow the opportunity of experimenting to escape, which was offered me in the Belcher Dispensary, where cases of intermittent fever were prescribed for in 1854; when it is generally admitted that intermittent fevers were less prevalent, by at least 50 to 75 per cent., than in preceding years.

"In 1853, I tried effectually cinchonine, quinoidine, piperine,

salicine, strychnine and arsenic, and found them wanting. It is true, that any one of these, or a combination of them, arrested attacks of intermittent fever, but it required a much longer time, and very large doses, and even then it was not always effectually done. The two objects I mainly aimed to attain, saving of time and expense, I failed in. Indeed, the quantity given of any of those remedies—arsenic and strychnine excepted—was so large, never less than ʒj and sometimes as much as ʒij, was as costly as ʒss of sulph. of quinine, and never so satisfactory in its result. There will, in my opinion, never be a surrogate of sulph. quinine, when the latter can be got. They must answer, when the stock of sulph. quinine should happen to be exhausted, as it often occurs in the western country, when no alternative is left.

"I did not carry my experiments, either with the arsenic or strychnine, far enough to justify a decided opinion. These drugs are entirely too deleterious in their effect; and not having the patients under my immediate observation, I refrained giving it, but in a few instances, and I was most wofully disappointed in my expectation.

"In the course of last summer, I read in some medical journal of the success met with by some eminent physician in Ohio, with the use of the nitric acid in intermittent fevers: I determined at once upon trying it myself. Only 23 cases of intermittent fever have come under my observation since then, and in all but one, it fully corroborated the statements of the Ohio practitioner.

"I sometimes preceded it with an emetic or cathartic, according to indications, and then gave the concentrated nitric acid, 5–6 drops, with some mucilage every two hours, until 60 drops were taken. It not only prevented the recurrence of the paroxysm, but I have not seen a return of the intermittent fever with any of them, although 4–6 weeks have elapsed since, and although several have had regular bi-weekly relapses for the last few months. It may be that the mildness of the type this year may have contributed to this result. As stated, I have not seen but one case to fail. It was prompt and decisive. In one instance, especially, I had only six hours to go upon; the patient had lived almost on quinine for the last year; it made him both deaf and poor, and withal he had regular returns every fortnight. He took 10 drops every hour, and no appearance of the paroxysm, and now six weeks have passed and no relapse, just three times as long a period of relief as he ever had since his first attack. The medicine cost five cents.

"I will continue my experiments, and trust others will do so likewise.

Respectfully,
Your obedient servant,
S. P."

"P. S. Accompanying this is a specified list of the 1694 cases treated in the Belcher Dispensary, in 1854, and an abstract of the Register of such cases as have an especial bearing upon the epidemics and endemics of this country. This extends only back to Sept. 16, 1853."

Weekly Meteorological Table for St. Louis, from April 3 to October 1, 1854. From observations by GEORGE ENGELMAN, M. D.

1854. WEEK FROM	BAROMETER—CORRECTED FOR TEMPERATURE. IN ENGLISH MEASURE.						
	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Lowest.	Highest.
April 3 to April 9	29.502	29.503	29.431	29.431	29.467	29.072	29.788
" 10 to " 16	29.373	29.402	29.373	29.403	29.388	29.133	29.562
" 17 to " 23	29.382	29.413	29.318	29.340	29.363	29.166	29.625
" 24 to " 30	29.423	29.452	29.398	29.428	29.425	28.897	29.879
May 1 to May 7	29.467	29.486	29.397	29.401	29.438	29.241	29 564
" 8 to " 14	29.272	29.289	29.214	29.225	29.250	28.932	29.456
" 15 to " 21	29.291	29.318	29.299	29.294	29.300	28.737	29.578
" 22 to " 28	29.389	29.406	29.340	29.335	29.367	29.068	29.631
" 29 to June 4	29.403	29.438	29.387	29.408	29.409	29.125	29.650
June 5 to " 11	29.349	29.383	29.363	29.376	29.368	29.122	29.538
" 12 to " 18	29.401	29.415	29.374	29.375	29.391	29.289	29.483
" 19 to " 25	29.416	29.414	29.406	29.388	29.406	29.244	29.547
" 26 to July 2	29.457	29.487	29.420	29.423	29.447	29.231	29.576
July 3 to " 9	29.473	29.500	29.419	29.402	29.448	29.319	29.599
" 10 to " 16	29.547	29.567	29.507	29.518	29.535	29.403	29.678
" 17 to " 23	29.487	29.507	29.420	29.460	29.468	29.305	29.629
" 24 to " 30	29.486	29.520	29.439	29.469	29.479	29.229	29.667
" 31 to Aug. 6	29.505	29.548	29.446	29.472	29.493	29.322	29 592
Aug. 7 to " 13	29.430	29.478	29.409	29.419	29.434	29.310	29.608
" 14 to " 20	29.523	29.555	29.475	29.491	29.511	29.378	29.605
" 21 to " 27	29.523	29.555	29.475	29.491	29.511	29.466	29.614
" 28 to Sept. 3	29.501	29.539	29.438	29.461	29.485	29.414	29.569
Sept. 4 to " 10	29.403	29.432	29.345	29.364	29.386	29.156	29.569
" 11 to " 17	29.539	29.557	29.497	29.531	29.531	29.228	29 758
" 18 to " 24	29.642	29.660	29.566	29.590	29.614	29.295	29.920
" 25 to Oct. 1	29.476	29.494	29.424	29.465	29.465	29.247	29.661

Weekly Meteorological Table for St. Louis—Continued.

1854. WEEK FROM	OPEN AIR THERMOMETER. FAHRENHEIT.							DIFFERENCE OF DRY AND WET BULB THERMOMETERS. FAHRENHEIT.						
	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Lowest.	Highest.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Lowest.	Highest.
April 3 to April 9	52.6	62.1	68.6	58.1	60.3	38.5	81.0	3.2	7.7	10.4	5.9	6.8	0.5	18.0
" 10 to " 16	42.6	48.3	52.9	45.9	47.4	34.0	66.5	2.4	4.1	6.4	3.3	4.0	1.0	12.5
" 17 to " 23	52.6	62.9	75.6	62.7	63.4	31.5	84.0	2.9	7.8	14.4	6.5	7.9	1.0	18.5
" 24 to " 30	52.1	59.9	66.6	54.5	58.3	34.0	88.5	3.4	6.2	11.1	5.1	6.4	0.5	21.5
May 1 to May 7	51.7	63.7	75.5	61.6	63.1	45.0	85.0	4.4	10.2	17.3	7.9	10.0	2.5	19.5
" 8 to " 14	57.1	68.0	76.1	65.7	66.7	51.0	85.0	5.4	8.9	12.9	5.4	8.1	0.5	18.0
" 15 to " 21	56.2	64.2	71.7	61.6	63.4	52.0	81.0	2.8	7.1	12.2	5.4	6.9	1.0	17.0
" 22 to " 28	63.4	71.4	79.2	68.4	70.6	56.5	83.5	1.9	5.9	9.8	2.4	5.0	0.0	14.5
" 29 to June 4	63.5	74.4	78.6	68.4	71.2	58.0	83.0	2.0	7.5	11.2	3.7	6.1	1.0	14.0
June 5 to " 11	59.3	66.6	72.3	61.6	64.9	49.0	86.0	2.1	6.9	9.9	3.0	5.5	0.5	14.5
" 12 to " 18	66.3	78.0	86.4	74.4	76.3	61.0	90.0	2.3	8.6	14.5	5.4	7.7	1.5	17.5
" 19 to " 25	71.3	83.0	87.4	77.4	79.8	64.0	93.5	2.8	9.5	13.6	4.7	7.6	0.5	19.0
" 26 to July 2	78.0	88.6	95.6	84.2	86.6	76.0	98.0	3.2	10.0	15.1	6.1	8.6	2.5	19.0
July 3 to " 9	76.6	85.4	90.8	79.2	83.0	68.5	98.5	3.1	8.6	10.6	4.4	6.7	1.0	17.0
" 10 to " 16	68.0	81.1	89.4	76.7	78.8	58.0	96.0	3.3	10.1	17.0	7.0	9.3	2.5	19.0
" 17 to " 23	76.1	89.6	95.8	81.6	85.8	70.5	100.5	3.4	10.0	18.9	7.1	9.9	2.0	24.0
" 24 to " 30	74.0	84.6	94.9	80.5	83.5	66.0	101.0	6.1	11.3	21.0	9.6	12.0	3.5	24.5
" 31 to Aug. 6	75.1	87.1	95.9	80.6	84.7	63.5	101.0	5.5	13.4	22.5	8.3	12.4	2.5	27.5
Aug. 7 to " 13	69.4	77.6	87.2	75.1	77.3	58.0	98.5	3.9	8.3	14.3	7.1	8.4	3.0	19.5
" 14 to " 20	67.4	76.4	87.1	74.1	76.2	61.0	98.0	4.1	8.9	16.1	7.1	9.0	1.0	21.5
" 21 to " 27	73.4	85.1	90.6	79.6	82.2	69.5	96.5	3.5	11.4	15.8	7.9	9.6	2.0	21.5
" 28 to Sept. 3	79.6	88.5	98.1	83.4	87.4	75.0	100.5	4.4	11.9	21.6	9.5	11.8	2.5	26.5
Sept. 4 to " 10	74.5	82.4	88.6	77.5	80.7	68.5	99.5	4.9	9.6	14.9	6.6	9.0	3.0	24.5
" 11 to " 17	64.5	72.1	81.3	68.6	71.6	53.0	93.5	2.6	6.2	11.4	3.9	6.0	1.0	16.5
" 18 to " 24	59.9	68.3	76.6	63.7	67.1	52.0	85.0	3.3	6.6	11.5	4.9	6.6	1.5	17.0
" 25 to Oct. 1	67.3	75.9	86.3	72.6	75.5	65.0	90.0	3.4	7.0	14.7	4.9	7.5	1.0	18.0

Weekly Meteorological Table for St. Louis—Continued.

1854. WEEK FROM	RELATIVE HUMIDITY.							CLEARNESS OF SKY.					NO. OF DAYS.		
	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Lowest.	Highest.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Fair.	Variable.	Overclouded.
April 3 to April 9	77	58	47	66	62	27	96	4.4	5.9	5.6	5.6	5.4	2	4	1
" 10 to " 16	82	70	60	75	72	34	93	2.6	3.0	2.3	5.6	3.4	1	3	3
" 17 to " 23	80	57	39	64	60	27	94	6.4	7.0	6.6	8.0	7.0	4	3	
" 24 to " 30	78	64	47	68	64	25	97	6.9	6.3	6.6	6.4	6.5	4	3	
May 1 to May 7	70	47	29	56	50	24	83	7.1	6.0	9.0	7.4	7.4	4	3	
" 8 to " 14	72	57	47	71	62	23	97	6.6	7.7	6.1	6.6	6.9	3	4	
" 15 to " 21	82	63	46	70	65	27	93	5.0	6.4	5.3	5.7	5.6	4	2	1
" 22 to " 28	89	72	59	88	77	40	100	2.7	2.7	3.1	5.6	3.5		7	
" 29 to June 4	89	66	54	81	72	46	95	6.4	6.6	5.0	5.9	6.0	2	5	
June 5 to " 11	87	65	56	82	72	45	97	3.4	2.4	2.6	5.3	3.4		6	1
" 12 to " 18	88	64	47	75	68	38	92	6.6	7.1	6.6	8.1	7.1	5	2	
" 19 to " 25	86	62	51	82	70	37	97	8.3	8.4	7.1	9.3	8.3	6	1	
" 26 to July 2	85	65	50	75	69	40	89	8.3	9.0	7.0	9.0	8.3	6	1	
July 3 to " 9	85	66	59	81	73	46	95	7.3	7.9	5.1	8.0	7.1	5	2	
" 10 to " 16	83	59	41	69	63	38	86	8.4	9.1	9.1	9.9	9.1	7		
" 17 to " 23	84	62	40	70	64	30	91	9.0	8.0	7.7	6.3	7.7	5	2	
" 24 to " 30	71	56	34	60	55	28	83	7.7	9.3	8.3	9.7	8.7	6	1	
" 31 to Aug. 6	74	51	31	65	55	25	88	7.9	7.6	5.7	7.7	7.2	4	3	
Aug. 7 to " 13	80	64	49	68	65	32	85	5.1	5.4	5.6	7.1	5.8	2	5	
" 14 to " 20	79	60	43	67	62	31	95	6.7	7.0	7.4	8.1	7.3	4	3	
" 21 to " 27	84	56	47	72	65	32	91	5.6	7.1	4.7	7.9	6.3	3	4	
" 28 to Sept. 3	80	57	34	62	58	22	88	9.7	8.9	8.3	9.7	9.1	7		
Sept. 4 to " 10	77	61	49	71	64	29	85	8.3	7.6	7.9	6.9	7.7	4	3	
" 11 to " 17	84	71	55	80	72	40	94	4.4	4.7	6.1	8.0	5.8	2	5	
" 18 to " 24	80	66	50	73	67	31	92	5.1	5.1	6.0	8.0	6.0	3	4	
" 25 to Oct. 1	82	69	47	77	69	38	94	6.7	7.4	5.7	7.7	6.9	5	2	

Weekly Meteorological Table for St. Louis—Continued.

1854. WEEK FROM	RAIN. Days.	RAIN. Hours.	RAIN. Quantity.	THUNDER-STORMS.	WINDS DURING WEEK.
April 3 to April 9	1	11	0.45 ins.		S.E. 2 3 2, S.W. 2, N.W. 2, S.E. 2, S.W. 4 5.
" 10 to " 16	3	47	1.85	1	N.W. 3, S.E. 2, E. 2, N.W. 2 3, N. 3 2.
" 17 to " 23	1	1	0.10	1	N. 2, S.E. 2, S. 2, S.W. 3 2, S.E. 2, E. 2.
" 24 to " 30	3	11¼	5.20	3	S.E. 3, W. 2, N.W. 4 3, N. 4 2, N.W. 2.
May 1 to May 7	1	1	0.05		S.W. 2, N.W. 3, W. 2, S.W. 2, N.E. 2, E. 2.
" 8 to " 14	3	12¾	3.33	4	S.E. 2, N.W. 3, S.E. 2, E. 3 4, W. 2.
" 15 to " 21	2	4½	1.08	2	S.E. 2 4, S.W. 4 5, W. 3 2, S.W. 2, W. 2.
" 22 to " 28	5	13¼	0.34		E. 2, S.E. 2.
" 29 to June 4	2	3	1.50	2	S.E. 2, N.E. 2 3, S.E. 2.
June 5 to " 11	2	4	0.43	1	S.E. 2, W. 3 4, N.E. 2, S.E. 2, N.W. 2.
" 12 to " 18	2	3	0.40	1	W. 3, N.E. 2, S.E. 2, N.W. 2, N.E. 2.
" 19 to " 25	1	3½	2.38	2	S.E. 2, N.W. 3, W. 3, S.W. 2, W. 2 3.
" 26 to July 2			0.00		S.W. 2 3, S.E. 2, S.W. 2.
July 3 to " 9	3	3	0.62	2	S. 2, S.W. 2, S.E. 2, S. 2, S.W. 2, N.W. 3.
" 10 to " 16			0.00		N.W. 3, N.E. 2, S.E. 2, S. 2.
" 17 to " 23			0.00		S. 2, S.E. 2, W. 3, N.W. 2.
" 24 to " 30	1	¾	0.30	1	S.E. 4, N.W. 4 2, N.E. 2, S.E. 2, W. 3, S.E. 3.
" 31 to Aug. 6			0.00	1	S.W. 3, S.E. 2, W. 4, N.W. 3, N.E. 2 3.
Aug. 7 to " 13	1	3	0.07		N.E. 3 4, S.E. 2, S.W. 2, W., N. 2.
" 14 to " 20	1	3½	1.18	1	N.E. 2, N.W. 3, N.E. 2, S.E. 2.
" 21 to " 27	1	1	0.55	1	S.E. 2, E. 3, S.E. 2, S.W. 2.
" 28 to Sept. 3			0.00		E. 3, S.W. 2, S.E. 2, S. 2.
Sept. 4 to " 10	1	½	0.20	1	S.E. 2, S.W. 2 3, N. 3, S.W. 3 2, W. 3 4, N.W. 2.
" 11 to " 17	4	3	0.94	3	W. 3, N.W. 2, N.E. 2, N.W. 3 2, N.E. 3 2.
" 18 to " 24	2	4½	0.30	1	S. 2 3, N.W. 3 2, N.E. 3, S.E. 2.
" 25 to Oct. 1	1	¼	0.03	1	S.E. 3 2, N.W. 2, N. 2, E. 2, S. 2.

Point of observation: Corner of Elm and Fifth Streets.

Position of barometer: 76 feet above City Directrix.

Scale of winds: 1, light breeze; 2, ordinary wind; 3, high wind; 4, gale; 5, violent gale.

(*Vide* notes to daily tables.)

Statement of the Weekly Mortality in St. Louis during six Months, from March to October, 1854.

Week ending Sunday	Weekly aggregate of all ages.	Total of 5 years and under.	Total by intestinal diseases.	Total by climatic fevers.	Total by continued fevers.
April 9 . . .	90	34	29	1	5
" 16 . . .	104	36	43	3	7
" 23 . . .	88	38	26	...	8
" 30 . . .	86	32	37	1	1
May 7 . . .	91	38	29	...	6
" 14 . . .	101	42	59	1	5
" 21 . . .	131	43	75	3	7
" 28 . . .	90	30	38	...	7
June 4 . . .	105	41	54	2	6
" 11 . . .	161	69	104	1	3
" 18 . . .	174	75	98	2	5
" 25 . . .	256	118	157	7	3
July 2 . . .	472	209	280	19	4
" 9 . . .	505	212	279	10	7
" 16 . . .	288	140	184	8	7
" 23 . . .	297	139	144	8	11
" 30 . . .	232	138	104	3	8
Aug. 6 . . .	299	126	103	15	17
" 13 . . .	184	107	65	9	2
" 20 . . .	165	98	60	7	8
" 27 . . .	173	88	78	7	11
Sept. 3 . . .	224	90	88	6	8
" 10 . . .	170	91	54	10	13
" 17 . . .	118	67	38	4	3
" 24 . . .	136	59	40	9	6
Oct. 1 . . .	115	58	35	4	7

Statement of the Daily Mortality by Cholera, Diarrhœa, Dysentery, Cholera Infantum, and "Sunstroke, in St. Louis, in 1854, *from March to October.*

	Cholera.	Diarrhœa.	Dysentery.	Cholera infantum.		Cholera.	Diarrhœa.	Dysentery.	Cholera infantum.
April 3	3	...	...	1	May 1	4	1	...	...
4	1	1	...	...	2	2	...	...	1
5	2	3	1	...	3	4	...	1	...
6	7	...	...	...	4	3	...	...	...
7	2	...	...	...	5	2	...	...	...
8	3	3	...	...	6	3	...	1	...
9	1	1	...	...	7	7	...	...	...
10	5	2	1	...	8	9	...	1	...
11	8	1	...	...	9	9	...	...	...
12	1	1	1	...	10	5	...	...	1
13	5	1	1	...	11	10	1	...	...
14	5	1	...	...	12	5	2	...	...
15	4	...	1	2	13	4	2	...	...
16	2	1	...	...	14	8	2	...	...
17	2	1	1	...	15	12	...	1	1
18	1	...	...	...	16	11	1	...	...
19	1	...	...	...	17	11	2	1	2
20	6	2	...	...	18	13	1	1	...
21	3	...	...	...	19	4	...	...	1
22	3	1	...	1	20	5	1	1	1
23	1	1	2	...	21	5	...	...	...
24	5	2	...	1	22	7	...	...	...
25	2	...	1	1	23	6	...	1	1
26	2	...	...	...	24	5	1	...	...
27	3	1	1	2	25	4	...	...	...
28	5	...	2	...	26	2	1	...	...
29	5	...	1	...	27	5	...	...	...
30	2	...	...	1	28	6	...	...	...
					29	10	1	...	...
					30	6	...	...	...
					31	4	...	1	...
Total	90	23	13	9	Total	191	16	9	8

Daily Mortality by Cholera, etc., in St. Louis, 1854.

	Cholera.	Diarrhœa.	Dysentery.	Cholera infantum.	Sunstroke.		Cholera.	Diarrhœa.	Dysentery.	Cholera infantum.	Sunstroke.
June 1	3	...	...	1	...	July 1	28	2	1	5	2
2	9	...	...	...	...	2	25	4	...	8	10
3	8	...	2	...	...	3	41	1	4	7	10
4	9	...	...	...	...	4	35	3	3	2	5
5	9	...	1	1	...	5	28	1	2	3	4
6	10	...	1	2	...	6	28	1	...	7	1
7	9	...	1	...	...	7	35	6	2	2	...
8	17	2	1	...	...	3	21	2	...	6	1
9	17	...	3	...	...	9	23	1	3	2	1
10	10	...	2	1	...	10	30	1	...	3	...
11	16	...	...	1	...	11	15	1	1	4	1
12	10	...	1	1	...	12	12	1	...	3	...
13	7	...	...	2	...	13	21	4	1	4	...
14	8	1	1	...	...	14	20	...	2	5	...
15	17	1	...	...	...	15	12	2	1	8	...
16	6	1	1	1	...	16	22	1	3	7	...
17	13	4	...	3	...	17	18	3	8	4	3
18	16	...	2	2	...	18	12	1	1	5	...
19	18	1	...	3	...	19	15	1	1	5	5
20	20	1	...	3	...	20	10	2	2	5	...
21	20	1	2	1	...	21	13	1	3	3	3
22	15	...	...	1	1	22	11	4	3	1	...
23	15	2	3	...	...	23	7	1	2	2	...
24	22	...	...	1	...	24	10	3	5	5	1
25	21	1	3	3	...	25	9	...	2	4	...
26	27	3	2	5	...	26	3	2	4	1	...
27	32	1	2	5	4	27	7	1	4	...	...
28	31	2	...	4	9	28	7	1	3	3	1
29	28	2	2	6	1	29	6	1	5	7	1
30	36	1	1	5	8	30	2	2	1	6	...
						31	7	3	3	6	7
Total	479	24	31	52	23	Total	533	57	72	133	56

Daily Mortality by Cholera, etc., in St. Louis, 1854.

	Cholera.	Diarrhœa.	Dysentery.	Cholera infantum.	Sunstroke.		Cholera.	Diarrhœa.	Dysentery.	Cholera infantum.	Sunstroke.
Aug. 1	9	3	5	5	...	Sept. 1	5	2	1	...	5
2	8	1	3	5	...	2	4	2	2	8	2
3	6	4	2	4	...	3	6	1	1	1	...
4	6	1	1	2	...	4	5	...	5	2	2
5	4	3	...	3	...	5	1	...	4	1	...
6	3	1	2	3	...	6	3	...	3	1	1
7	4	...	2	2	...	7	1	3	4	...	...
8	5	1	5	2	...	8	1	5	3	2	1
9	4	2	4	5	...	9	1	1	...	2	...
10	1	...	...	...	...	10	2	1	1	2	...
11	6	...	2	2	...	11	3	1	2	...	...
12	3	...	1	7	...	12	1	1	1	6	...
13	2	2	2	1	...	13	...	2	...	2	...
14	1	...	3	1	...	14	1	1	1	2	...
15	3	3	2	4	...	15	1	...	...	2	...
16	2	1	2	4	...	16	2	...	1	3	...
17	...	2	2	2	...	17	1	1	3	...	...
18	2	2	4	3	...	18	4	1	1	2	...
19	6	...	1	2	...	19	3	1	1	...	...
20	3	3	...	2	...	20	1	1	3	1	...
21	2	...	...	1	...	21	...	...	1	1	...
22	5	1	1	3	...	22	...	...	1	1	...
23	2	2	2	6	...	23	1	5	1	2	1
24	12	3	4	2	...	24	3	3	1	1	...
25	4	...	3	4	...	25	1	...	3	1	...
26	9	2	1	1	1	26	1	1	3	...	...
27	3	1	2	2	2	27	1	2	2	2	...
28	3	2	2	2	...	28	...	...	1	2	...
29	4	4	1	...	3	29	1	2	2	1	...
30	6	8	2	5	3	30	1	4	1	...	...
31	8	3	2	3	3	Oct. 1	1	1	1	...	...
Total	136	55	63	88	12	Total	56	42	54	48	12

Table of the Weekly Mortality of Subjects 5 years of age and under, in St. Louis, in the Spring and Summer of 1854, showing the chief Causes of Infant Mortality during the prevalence of Epidemic Cholera.

Week ending Sunday.	Weekly aggregate of deaths, 5 years and under.	Cholera.	Cholera infantum.	Diarrhœa.	Dysentery.	Marasmus.	Teething.	Convulsions.	Meningitis.	Eruptive fevers.	Pertussis.	Acute diseases of air-tubes.	Consumption.	Stillborn.
April 9	34	2	1	3	...	1	...	6	3	2	...	2	1	6
" 16	36	4	2	...	1	2	2	2	4	1	...	1	3	1
" 23	38	...	1	2	2	1	2	7	...	3	1	4	...	4
" 30	32	...	5	2	2	2	...	9	2	3	...	...	1	5
May 7	38	7	1	1	1	2	...	3	4	2	1	3	1	3
" 14	42	11	1	3	...	3	2	3	1	3	...	1	2	4
" 21	43	12	5	2	1	1	...	5	2	3	...	2	2	4
" 28	30	8	1	...	...	1	...	4	1	...	2	...	...	3
June 4	41	6	1	...	2	2	3	6	1	4	2	4	1	2
" 11	69	21	5	1	6	4	1	2	3	3	...	1	4	4
" 18	75	13	9	5	4	5	2	9	5	3	...	1	2	...
" 25	118	32	12	4	3	5	5	12	4	11	1	4	3	4
July 2	209	50	38	10	6	8	18	20	18	17	2	6	3	4
" 9	212	35	29	8	8	4	16	28	16	9	1	1	3	2
" 16	140	28	34	7	2	9	9	13	6	5	3	2	...	4
" 23	139	22	25	7	13	3	8	18	12	6	2	2	1	2
" 30	138	14	26	5	17	12	12	15	6	4	...	2	1	4
August 6	126	3	28	8	6	11	12	16	7	3	...	1	1	3
" 13	107	3	19	2	10	9	7	8	9	1	1	...	3	3
" 20	98	2	18	8	9	7	4	12	3	1	...	1	4	1
" 27	88	5	19	6	3	3	5	12	9	1	...	1	...	1
Sept. 3	90	3	19	6	4	5	4	9	7	1	1	3	3	5
" 10	91	...	10	4	15	8	4	13	7	...	2	...	4	5
" 17	67	...	15	2	6	6	3	9	3	...	...	3	1	2
" 24	59	1	8	4	1	7	3	7	2	...	1	1	3	1
October 1	58	...	6	4	4	7	2	6	5	1	...	...	1	1
	2,218	282	338	104	126	128	124	254	140	87	20	46	48	78

An analysis, showing pointedly the results in the above table, would be very interesting, but we have time only to notice one or two points. It will be observed that eight of the diseases named in the series, increase in each successive week, until they attain their greatest weekly mortality in the week ending July 2d, the maximum week of the cholera mortality subsequently, their weekly variations in fatality correspond very much with the variations of cholera. The entire mortality of subjects of five weeks and under, is, in each succeeding week from April 1st to July 2d, more and more absorbed in the 13 tabulated mortuary causes, so that in this final week the aggregate, 209, is made up of 200 subjects dying of these 13 causes, leaving, therefore, but 9 to be accounted for by the occasional or rarer causes of infant mortality. The augmentation of general mortality as a result of the pressure of the "cholera cause," is strikingly manifest in the instance of the eruptive fevers, which were not generally prevalent in the city, the usual sporadic cases only occurring, yet the mortality by these fevers was so much increased in the week ending July 2d, as to imply an epidemic prevalence of them.

Tabular Statement of the Monthly Mortality by Diarrhœa in St. Louis, in 1854.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 2 yrs.	1	1	2	..	2	1	1	2	3	1	5	6	16	12	6	12	3	5	4	5	1	3	1	1	45	49	94
2 to 5 "	1	1	..	..	1	..	3	1	1	..	2	1	2	5	5	7	3	1	3	1	2	2	1	..	24	19	43
5 " 10 "	..	..	..	.	2	..	..	4	2	1	2	..	5	..	1	..	1	..	2	1	1	1	..	..	16	7	23
10 " 15 "	..	..	1	..	1	..	1	..	..	..	1	..	..	1	..	2	..	1	1	1	..	..	1	..	6	5	11
15 " 20 "	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	1	..	2	..	..	..	4	1	5
20 " 30 "	5	1	1	..	5	2	2	..	..	..	..	2	2	1	2	2	9	..	11	..	9	1	9	1	55	10	65
30 " 40 "	2	..	3	1	5	1	2	..	4	..	1	..	..	1	5	2	8	1	10	4	10	..	14	..	64	10	74
40 " 50 "	1	..	..	..	..	1	2	2	..	1	..	1	3	1	3	3	3	3	4	2	7	1	6	1	29	16	45
50 " 60 "	1	..	..	..	..	1	1	1	..	1	1	..	3	1	2	1	3	..	5	..	3	..	4	..	23	5	28
60 and over	..	1	1	1	..	..	1	..	1	..	1	..	2	..	2	..	..	..	2	..	1	..	2	1	13	3	16
Unknown	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	1	2	3
Total	11	4	8	2	16	6	13	10	11	5	13	11	35	22	26	29	30	12	43	14	36	8	38	4	280	127	407

NOTE.—The excess of males in the above is remarkable, and results from the prevalence of chronic diarrhœa in the hospitals during the autumn and winter months. Chronic diarrhœa, not a result of acute disease, was prevalent in the hospitals during the last half of the year, and seemed to *infect* almost every patient brought in, no matter what his previous disease might be; even the syphilitic patients were attacked by it. Of the above mortality, 18 are reported as from bilious diarrhœa.

Tabular Statement of the Monthly Mortality by Dysentery in St. Louis, in 1854.

AGES.	JAN.		FEB.		MAR.		AP'L.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.		AGGREGATE BOTH SEXES.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 2 yrs.	2	..	1	1	4	..	2	..	1	1	7	9	16	11	12	9	11	9	10	7	6	5	3	1	75	53	128
2 to 5 "	..	..	..	..	..	..	2	..	..	..	5	1	5	4	4	3	7	2	2	8	4	2	2	2	31	22	53
5 " 10 "	2	..	..	..	..	..	..	..	..	..	5	..	2	..	..	2	..	..	..	3	1	2	1	1	11	8	19
10 " 15 "	..	..	1	..	..	..	..	..	..	..	..	..	..	2	..	1	1	..	3	1	2	..	..	..	7	4	11
15 " 20 "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	2	1	..	..	1	1	..	1	..	6	3	9
20 " 30 "	..	..	..	..	..	..	3	1	1	1	2	1	7	5	6	5	4	4	7	3	3	3	2	5	35	28	63
30 " 40 "	1	..	..	..	..	..	..	..	..	..	1	..	..	4	2	2	4	1	..	6	2	2	2	1	12	16	28
40 " 50 "	..	..	1	..	..	1	..	..	1	..	2	1	3	4	1	3	2	1	5	1	..	1	2	..	17	12	29
50 " 60 "	..	..	..	..	..	..	1	1	..	..	..	1	2	3	..	1	3	2	2	1	..	1	4	..	12	10	22
60 and over	..	..	1	..	..	..	1	..	1	1	..	1	..	3	1	2	..	1	6	2	1	1	1	..	12	11	23
Unknown	..	..	..	..	..	..	2	..	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	4	1	5
Total	5	..	4	1	4	1	11	2	6	3	22	14	35	37	29	30	33	20	35	33	20	17	18	10	222	168	390

Daily Meteorological Table for April, 1854, *from observations*

	BAROMETER.	OPEN AIR THERMOMETER. FAHRENHEIT.					DIFFERENCE OF DRY AND WET BULBS. FAHRENHEIT.					RELATIVE HUMIDITY.				
	Daily mean.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.
April 3	29.719	38.5	47.0	65.0	54.5	51.2	5.0	8.0	14.5	9.0	9.1	54	42	29	42	42
" 4	29.668	51.0	55.5	52.5	53.0	53.0	6.0	6.5	1.0	1.0	3.6	58	59	93	93	76
" 5	29.552	52.0	59.5	62.5	51.5	56.4	1.0	4.0	5.0	1.5	2.9	93	76	72	90	83
" 6	29.427	49.0	63.0	80.0	66.0	64.5	0.5	7.0	18.0	8.0	8.4	96	62	27	59	61
" 7	29.417	54.0	65.0	81.0	67.0	66.7	2.5	7.0	17.5	8.5	8.9	83	63	33	57	59
" 8	29.353	60.0	74.0	81.0	66.5	70.4	3.0	11.0	16.0	9.0	9.7	82	51	38	54	56
" 9	29.099	64.0	71.0	58.0	48.0	60.2	5.5	10.5	11.0	4.5	7.9	70	53	37	66	56
Mean of week	29.462	52.6	62.1	68.6	58.1	60.3	3.2	7.7	10.4	5.9	7.2	77	58	47	66	
April 10	29.398	42.0	42.0	49.0	44.0	44.2	3.0	2.5	7.0	4.0	4.1	74	78	51	68	68
" 11	29.513	39.5	51.5	57.5	47.0	48.9	2.5	7.0	9.0	3.0	5.4	77	53	47	77	63
" 12	29.474	42.0	56.0	66.5	55.5	55.0	1.0	6.5	12.5	6.5	6.6	91	60	39	59	62
" 13	29.446	52.0	58.5	59.0	56.0	56.4	5.0	6.0	2.5	1.0	3.6	65	64	84	93	76
" 14	29.191	53.0	53.0	53.0	43.5	50.6	2.0	1.0	2.0	2.0	1.7	86	93	86	83	87
" 15	29.314	36.0	36.5	36.5	35.0	36.0	1.0	1.5	2.0	1.0	1.4	90	86	79	89	86
" 16	29.377	34.0	40.5	48.5	40.0	40.7	2.5	5.5	9.5	5.5	5.7	74	54	34	53	54
Mean of week	29.388	42.6	48.3	52.9	45.9	47.4	2.4	4.1	6.4	3.3		82.4	67	60	76	
April 17	29.518	31.5	42.0	52.0	42.0	41.9	1.5	6.5	11.5	4.0	5.9	84	46	27	66	56
" 18	29.543	37.5	50.0	63.5	51.5	50.6	2.5	7.0	13.5	7.5	7.6	76	51	31	50	52
" 19	29.375	46.0	62.0	79.5	64.5	63.0	3.0	10.5	16.0	8.0	9.4	76	44	37	58	54
" 20	29.347	58.0	72.0	83.5	69.0	70.6	4.0	12.0	18.4	8.5	10.7	76	45	32	58	53
" 21	29.245	64.0	65.0	84.0	69.0	70.5	5.5	4.0	15.5	6.5	7.9	70	78	42	68	64
" 22	29.268	65.5	70.0	83.0	72.5	72.7	3.0	5.0	13.5	6.0	6.9	84	75	49	71	70
" 23	29.294	66.0	79.0	84.0	70.5	74.9	1.0	9.5	12.0	5.0	6.9	94	60	54	75	71
Mean of week	29.370	52.6	62.9	75.6	62.7	63.5	2.9	7.8	14.4	6.5		80	57	39	64	
April 24	29.321	64.0	76.5	88.5	75.0	76.0	4.0	8.5	21.5	11.0	11.2	78	62	27	52	55
" 25	29.156	70.5	68.0	79.5	93.0	70.2	8.5	4.0	12.5	2.5	6.9	60	80	48	86	68
" 26	28.991	60.0	70.0	71.0	59.0	65.0	2.0	5.0	2.0	0.5	2.4	88	75	90	97	87
" 27	29.296	57.0	53.0	46.0	40.5	49.1	1.0	1.0	3.5	4.0	2.4	93	93	72	66	81
" 28	29.846	34.0	42.0	52.5	43.0	42.9	1.5	5.0	9.5	5.5	5.4	85	58	39	56	59
" 29	29.774	38.0	51.5	59.0	47.0	48.9	4.0	9.0	13.5	5.0	7.9	63	41	25	62	48
" 30	29.587	41.5	58.0	69.5	54.0	55.7	2.5	11.0	15.5	7.0	9.0	78	36	29	55	49
Mean of week	29.428	52.1	59.9	66.6	54.5	58.3	3.4	6.2	11.1	5.1		78	64	47	68	
Mean of April	29.536	48.5	56.5	64.2	53.8		2.9	6.3	10.7	5.1		78	61	44	67	

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CLEARNESS OF SKY.					NO. OF DAYS			RAIN.			THUNDER-STORMS.	WINDS.
Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Fair.	Variable.	Overclouded.	Days.	Hours.	Quantity.		
5	...	9	...	3	...	1	...	...	...	...	...	S.E, S.S.E. 3 2, S. 2.
...	...	...	...	...	...	...	1	1	11	0.45	...	S.S.E. 2.
...	9	1	10	5	...	1	...	...	...	...	...	S.E., S.W., W. 3, S.
9	8	10	10	9	1	...	...	...	...	...	...	S.S.W., W.S.W.
9	10	10	10	10	1	...	...	...	...	...	...	N.N.W., E., S.E.
8	8	6	9	8	...	1	...	...	...	...	...	S.E., S.
...	6	3	...	2	...	1	...	...	...	...	...	S. 2, S.W. 4, W.S.W. 5 3.
4.4	5.9	5.6	5.6	9	2	4	1	1	11	0.45	...	
...	...	2	10	3	...	1	...	...	...	...	...	W. 3, W.N.W. 3.
10	6	2	10	7	...	1	...	...	...	...	...	N., E., E.S.E.
5	9	9	9	8	1	...	...	...	...	...	...	E.S.E.
...	...	...	...	...	...	...	1	1	7	0.55	...	E.
...	...	...	...	...	...	...	1	1	20	1.07	1	E., N., N.W.
...	...	...	...	...	...	...	1	1	20	0.23	...	N.W. 3, N.N.W. 2 3.
3	6	3	10	5	...	1	...	...	...	...	...	N.N.W. 3 3 2.
2.6	3	2.3	5.6	6	1	3	3	3	47	1.85	1	
9	10	10	10	10	1	...	...	...	...	...	...	N.N.W., N., N.N.E.
10	9	10	10	10	1	...	...	...	...	...	...	S.E., S.S.E., S.
10	10	10	10	10	1	...	...	...	...	...	...	S.
10	10	9	9	9	1	...	...	...	...	...	...	S., S.S.E.
3	...	2	9	3	...	1	...	...	...	...	...	S.S.W., S.E., S.S.W.
...	5	5	...	3	...	1	...	...	...	...	...	S.S.W., S.W., S.
3	5	...	8	4	...	1	...	1	1	0.10	1	W., E.S.E., E.
6.4	7.0	6.6	8.0	7	4	3	...	1	1	0.10	1	
9	9	9	6	8	1	...	...	...	...	...	...	E.S.E., S.S.E. 3 2.
2	...	7	...	2	...	1	...	1	3½	0.74	2	S.S.W., S.E., W. 3, S.S.E.
9	5	...	...	3	...	1	...	1	3½	2.89	1	S.E., S., E., W. 4, S.E.
...	...	...	10	2	...	1	...	1	4¼	1.57	...	W. 2, W.N.W. 4, N.N.W. 4 3.
10	10	10	10	10	1	...	...	...	...	...	...	N. 2 3 4 3 2.
10	10	10	9	10	1	...	...	...	...	...	...	N.N.E., N.
8	10	10	10	9	1	...	...	...	...	...	...	N.N.W., W.
6.9	6.3	6.6	6.4	7	4	3	...	3	11¼	5.20	3	
5.4	5.8	5.4	6.6		12	14	4	8	70¼	7.60	5	S.E., then S. & N.W.

Daily Meteorological Table for May, 1854, from observations

	BAROMETER.	OPEN AIR THERMOMETER. FAHRENHEIT.					DIFFERENCE OF DRY AND WET BULBS. FAHRENHEIT.					RELATIVE HUMIDITY.				
	Daily mean.	Sunrise	9 A. M.	3 P. M.	10 P. M.	Mean.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.
May 1	29.499	48.0	63.0	74.0	61.5	61.1	3.0	10.5	18.5	8.0	10.0	71	44	24	55	48.5
" 2	29.522	45.0	48.0	64.0	54.0	52.5	5.5	8.0	14.0	7.0	8.6	57	43	29	56	46.2
" 3	29.528	46.0	62.5	72.0	59.0	59.9	2.5	10.5	17.5	5.0	8.9	80.5	44	24	70	54.6
" 4	29.464	54.0	66.0	76.5	60.0	64.1	3.0	8.0	16.5	8.0	8.8	80	59	32	55	56.5
" 5	29.441	55.0	66.5	76.0	63.0	65.1	2.5	9.5	17.0	10.5	9.9	83	52	31	45	52.7
" 6	29.376	56.0	68.0	81.0	66.0	67.1	7.5	12.0	18.0	8.0	11.4	54	42	30	59	46.2
" 7	29.243	58.0	72.0	85.0	68.0	70.7	6.5	13.0	19.5	9.0	12.0	61	42	30	55	47.2
Mean of week	29.438	51.7	63.7	75.5	61.6	62.9	4.4	10.2	17.3	7.9	9.9	70	47	29	56	
May 8	29.203	62.0	75.0	79.0	74.0	72.5	8.0	9.5	9.5	6.0	8.2	56	57	60	72	61.2
" 9	29.163	63.0	78.0	85.0	66.0	73.0	2.0	11.0	16.5	5.0	8.6	89	54	39	73	64.0
" 10	29.331	52.5	59.0	68.5	57.0	59.2	8.5	10.0	17.0	6.5	10.5	45	43	23	60	43.0
" 11	29.401	51.0	67.0	78.0	62.5	64.6	3.5	11.0	18.0	7.5	10.0	74	45	29	59	52.0
" 12	29.200	56.5	72.0	81.0	75.5	71.2	5.5	13.0	11.5	8.5	9.6	71	42	54	61	57.0
" 13	29.055	62.5	61.5	67.5	63.0	63.6	1.5	0.5	2.5	2.5	1.7	92	97	87	86	90.5
" 14	29.398	52.0	63.5	74.0	62.0	62.9	3.0	7.5	15.0	2.0	6.9	79	59	35	88	65.2
Mean of week	29.250	57.1	68.0	76.1	65.7		5.4	8.9	12.9	5.4	7.9	72	57	47	71	
May 15	29.407	58.0	72.0	81.0	69.5	70.1	2.0	8.0	14.5	5.5	7.5	87	63	43	73	66.5
" 16	28.941	66.5	64.0	72.0	65.5	67.0	3.5	3.0	3.0	3.0	3.1	82	83	85	84	86.0
" 17	28.941	55.0	52.0	58.0	55.0	55.0	3.5	4.0	8.0	5.0	5.0	78	73	53	68	68.0
" 18	29.300	52.0	62.0	75.0	63.0	63.0	4.5	8.0	17.0	6.5	9.0	69	56	30	64	55.0
" 19	29.431	56.0	66.0	72.0	56.0	62.5	1.0	11.0	17.0	7.0	9.0	93	45	27	57	55.5
" 20	29.529	52.0	68.0	68.5	60.0	62.0	3.0	9.0	11.5	3.5	6.7	79	55	45	79	64.5
" 21	29.555	54.0	65.5	75.5	62.0	64.2	2.0	7.0	14.5	7.0	7.6	87	64	39	62	63.0
Mean of week	29.301	56.2	64.2	71.7	61.6		2.8	7.1	12.2	5.4	6.8	82	63	46	70	
May 22	29.609	57.0	70.0	77.0	62.0	66.5	4.5	12.0	14.5	5.5	9.1	72	44	40	69	56.2
" 23	29.527	56.5	65.0	70.0	63.0	63.6	5.0	8.0	7.0	0.5	5.1	69	59	66	97	73.0
" 24	29.355	62.0	65.0	77.0	68.0	68.0	0.5	0.0	6.5	1.5	2.1	97	100	71	92	90.0
" 25	29.324	64.0	73.0	83.0	72.0	73.0	0.0	4.0	10.5	3.0	4.4	100	81	58	85	81.0
" 26	29.303	68.0	75.0	83.0	68.5	73.6	1.0	6.0	10.5	1.5	4.8	94	72	58	92	79.0
" 27	29.291	68.0	77.0	81.0	72.0	74.5	1.0	7.0	9.0	2.0	4.7	94	69	63	90	79.0
" 28	29.164	68.0	75.0	83.5	73.0	74.9	1.0	4.0	10.5	3.0	4.6	94	81	56	85	79.0
Mean of week	29.368	63.4	71.4	79.2	68.4		1.9	5.9	9.8	2.4	5.0	89	72	59	88	
May 29	29.164	69.0	68.0	83.0	73.0	73.2	1.0	2.5	10.0	3.	4.1	95	87	60	85	82.0
" 30	29.207	68.0	83.0	78.0	67.0	74.0	1.0	8.0	8.5	2.	4.9	95	68	63	90	79.0
" 31	29.361	65.0	76.0	80.0	67.0	72.0	1.0	6.0	9.0	3.	4.7	95	73	62	84	78.5
Mean of May	29.332	58.1	67.7	76.1	68.8		3.2	7.8	12.6	5.0		80	61	46	72	

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CLEARNESS OF SKY.					NO. OF DAYS			RAIN.			THUNDER-STORMS.	WINDS.
Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Fair.	Variable.	Overclouded.	Days.	Hours.	Quantity.		
9	3	9	...	5	...	1	...	...	...	...	...	S.W., S.S.W., S.W.
...	1	10	9	5	...	1	...	1	1	0.05	...	N.N.W. 3 3, W. 3 2.
9	9	10	7	9	1	...	...	...	...	...	...	W.
5	...	6	8	5	...	1	...	...	...	...	...	S.S.W.
8	10	10	8	9	1	...	...	...	...	...	...	W., N., E.N.E.
9	9	9	10	9	1	...	...	...	...	...	...	E.N.E.
10	10	9	10	10	1	...	...	...	...	...	...	N.E., E.
7.1	6	9	7.4	7	4	3	...	1	1	0.05	...	
8	8	3	2	5	...	1	...	1	¼	0.03	1	E.S.E, S.E.
4	9	4	5	5	...	1	...	1	½	0.07	1	S.S.E.
5	10	10	10	9	1	...	...	...	...	...	...	W.N.W. 3, W. 3, S. 2.
10	10	10	9	10	1	...	...	...	...	...	...	S., S.E.
9	7	3	...	5	...	1	...	...	...	...	...	E. 2 3, E.S.E. 4.
...	...	3	10	3	...	1	...	1	12	3.23	2	E.S.E., W., S., S.E.
10	10	10	10	10	1	...	...	...	...	...	...	W.
6.6	7.7	6.1	6.6	7	3	4	...	3	12¾	3.33	4	
9	9	10	10	9	1	...	...	...	...	...	...	S.S.E. 2 3.
...	...	...	8	2	...	1	...	1	4	1.03	2	E.S.E. 2 4 3, E., S.E. 3.
...	...	...	...	...	...	...	1	...	...	...	...	W.S.W. 3 4 5 4.
8	10	10	...	7	1	...	...	...	...	...	...	W. 3, S.W., S.
6	9	9	10	8	1	...	...	1	½	0.05	...	W. 2 3.
8	8	...	2	4	...	1	...	...	...	...	...	S.S.W., W.
4	9	8	10	8	1	...	...	...	...	...	...	W.S.W., N.N.W.
5	6.4	5.3	5.7	9	4	2	1	2	4½	1.08	2	
6	8	4	10	7	...	1	...	...	...	...	...	N.N.E., E. 2 2.
8	...	...	...	2	...	1	...	1	8½	0.17	...	E.
...	...	3	8	3	...	1	...	1	4	0.03	...	E., S.E., S.
...	5	5	9	5	...	1	...	...	...	...	...	S., S.E.
...	2	2	...	1	...	1	...	1	¼	0.05	...	E.S.E.
5	2	4	2	3	...	1	...	1	¼	0.06	...	E.S.E.
...	2	4	10	4	...	1	...	1	¼	0.03	...	S.E., E.S.E.
2.7	2.7	3.1	5.6	6	...	7	...	5	13¼	0.34	...	
...	...	8	8	4	...	1	...	1	1½	0.10	1	S.E.
9	9	...	...	4	...	1	...	1	1½	1.40	1	S., S.E., W. 3 6, E.S.E.
8	6	2	...	4	...	1	...	...	...	...	...	S.E., E., N.E.
5.4	5.6	5.6	6		11	19	1	13	34½	6.30	8	S.E., then W.

Daily Meteorological Table for June, 1854, from observations

	BAROMETER.	OPEN AIR THERMOMETER. FAHRENHEIT.					DIFFERENCE OF DRY AND WET BULBS. FAHRENHEIT.					RELATIVE HUMIDITY.				
	Daily mean.	Sunrise.	9 A.M.	3 P.M.	10 P.M.	Mean.	Sunrise.	9 A.M.	3 P.M.	10 P.M.	Mean.	Sunrise.	9 A.M.	3 P.M.	10 P.M.	Mean.
June 1	29.595	60.0	66.0	74.5	64.5	66.2	2.5	6.0	12.5	5.0	6.5	85	68	46	72	68
" 2	29.608	58.0	73.0	70.0	66.5	66.9	4.0	10.0	12.0	4.0	7.5	76	54	49	79	64
" 3	29.524	61.5	76.0	83.0	69.0	72.4	2.0	10.0	14.0	4.0	7.5	88	56	46	80	68
" 4	29.405	63.0	78.5	82.0	72.0	73.9	2.0	10.0	12.5	5.0	7.4	89	57	51	75	68
Mean of week	29.411	63.5	74.4	78.6	68.4		2.0	7.5	11.2	3.7	6.1	89	66	54	81	72
June 5	29.288	67.0	74.0	72.5	66.5	70.0	3.0	6.0	3.5	0.5	3.2	84	72	82	97	84
" 6	29.189	63.0	78.0	86.0	64.5	72.9	0.5	9.0	14.5	2.5	6.6	97	61	47	86	73
" 7	29.246	61.0	58.0	59.0	50.0	57.0	2.5	3.0	5.0	3.0	3.4	85	81	70	78	78
" 8	29.355	49.0	54.0	65.0	60.0	57.0	2.0	5.0	10.0	5.0	5.5	85	67	49	71	68
" 9	29.452	55.0	66.0	72.5	60.5	63.5	2.5	9.0	12.0	3.0	6.6	83	54	46	82	66
" 10	29.527	58.5	65.0	72.0	63.0	64.6	2.0	6.0	10 5	3.5	5.5	87	67	51	80	71
" 11	29.516	61.5	71.0	79.0	66.5	69.5	2.0	10.0	13.5	3.5	7.2	88	53	45	81	67
Mean of week	29.368	59.3	66.6	72.3	61.6	64.9	2.1	6.9	9.9	3.0	5.4	87	65	56	82	72
June 12	29.444	61.0	75.0	84.0	70.5	72.6	1.5	11.0	16.5	5.0	8.5	91	52	38	75	64
" 13	29.390	63.0	78.0	85.0	73.5	74.9	2.5	8.0	15.0	5.5	7.7	86	65	44	74	67
" 14	29.417	66.0	82.0	87.0	73.5	77.1	2.5	11.0	17.5	6.0	9.2	86	56	38	71	63
" 15	29.386	69.5	82.0	89.0	77.0	79.4	4.5	11.0	15.0	8.0	9.6	77	56	46	65	61
" 16	29.302	70.0	72.0	85.0	74.5	75.4	2.0	2.0	8.0	3.0	3.7	89	89	68	86	83
" 17	29.372	67.5	76.0	85.0	75.0	75.9	1.5	6.0	13.5	5.0	6.5	92	72	49	77	72
" 18	29.426	67.0	81.0	90.0	76.5	78.6	1.5	11.0	16.0	5.5	8.5	92	55	44	76	67
Mean of week	29.391	66.3	78.0	86.4	74.4	76.5	2.3	8.6	14.5	5.4	7.7	88	64	47	75	68
June 19	29.378	73.0	86.0	92.0	79.0	82.5	4.0	10.0	15.0	5.0	8.5	81	61	48	78	67
" 20	29.267	76.0	87.0	73.0	70.0	76.5	3.5	9.5	2.0	1.5	4.1	83	64	90	92	82
" 21	29.373	67.0	76.0	81.0	70.0	73.5	0.5	9.0	16.0	4.5	7.5	97	60	38	77	68
" 22	29.391	64.0	79.0	87.5	78.0	77.1	2.0	8.0	13.5	5.0	7.1	89	66	50	78	71
" 23	29.474	72.0	84.0	93.0	80.5	82.4	3.0	10.0	19.0	6.0	9.5	86	60	37	74	64
" 24	29.518	73.0	84.0	92.0	82.5	82.9	2.5	10.0	14.0	5.5	8.0	88	60	51	77	69
" 25	29.439	74.0	85.0	93.5	82.0	83.6	4.0	10.0	15.5	5.5	8.8	81	61	47	77	66
Mean of week	29.406	71.3	83.0	87.4	77.4	79.8	2.8	9.5	13.6	4.7	7.6	86	62	51	82	70
June 26	29.492	76.0	89.0	95.5	83.0	85.9	2.5	11.0	16.0	6.0	8.7	88	59	47	75	67
" 27	29.529	77.5	89.0	97.0	84.0	86.9	3.5	10.0	19.0	7.5	10.0	83	62	40	70	64
" 28	29.491	78.5	86.0	94.5	84.5	85.9	4.0	9.0	14.0	5.0	8.0	82	65	52	79	69
" 29	29.300	78.0	88.0	96.0	85.0	86.7	3.5	10.0	16.0	8.0	9.4	84	62	47	68	65
" 30	29.334	79.0	88.0	96.0	83.5	86.6	4.0	8.0	13.0	5.5	7.6	82	70	55	77	71
Mean of June	29.415	67.0	77.5	84.0	72.8		2.6	8.6	13.1	4.7		87	63	50	77	

made in St. Louis. By GEORGE ENGELMAN, M. D.

CLEARNESS OF SKY.					NO. OF DAYS			RAIN.			THUNDER-STORMS.	WINDS.
Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Fair.	Variable.	Overcloudied.	Days.	Hours.	Quantity.		
8	9	10	10	9	1	...	...	...	...	...	...	N.E. 2 3.
9	8	5	10	8	...	1	...	...	...	...	...	E.N.E. 2 3.
3	8	8	10	7	1	...	...	...	...	...	...	E.N.E. 2.
8	6	2	3	5	...	1	...	...	...	...	...	E., S.E.
6.4	6.6	5.0	5.9		2	5	...	...	...	...	...	
5	...	...	9	3	...	1	...	1	2	0.07	...	E., S.E., S.
10	6	4	...	5	...	1	...	1	2	0.36	1	S., S.W., S. 2 3.
...	...	...	3	1	...	...	1	...	...	...	...	W. 4 3.
1	...	6	2	2	...	1	...	...	...	...	...	W. 3 2.
5	4	3	8	5	...	1	...	...	...	...	...	N., N.E., S.E.
...	...	2	5	2	...	1	...	...	...	...	...	E.S.E., E.
3	7	3	10	6	...	1	...	...	...	...	...	N.E., N.W., S.E.
3.4	2.4	2.6	5.3	7.4	...	6	1	2	4	0.43	1	
10	7	6	9	8	...	1	...	...	...	...	...	W. 2 3, S.
9	9	5	9	8	1	...	...	...	...	...	...	S. 2.
10	10	7	9	9	1	...	...	...	...	...	...	N., N.N.W., N.N.E.
8	9	6	5	7	1	...	...	...	...	...	...	E.N.E., E.S.E.
...	...	3	5	2	...	1	...	1	2	0.24	...	S.E., E.S.E.
...	6	9	10	6	1	...	...	1	1	0.16	1	S.S.E., N.W.
9	9	8	10	9	1	...	...	...	...	...	...	N.W., N.E., E.S.
6.6	7.1	6.6	8.1	7	5	2	...	2	3	0.40	1	
10	9	6	9	8.5	1	...	...	...	...	...	...	S.E.
...	3	...	6	2.2	...	1	...	1	3½	2.38	2	S.E., S., S.W., W.
9	9	10	10	9.5	1	...	...	...	...	...	...	W., W.N.W. 3.
10	8	8	10	9.0	1	...	...	...	...	...	...	W. 2 3.
10	10	10	10	10.0	1	...	...	...	...	...	...	S.W.
9	10	8	10	9.2	1	...	...	...	...	...	...	S.W., W. 2 3 2.
10	10	8	10	9.5	1	...	...	...	...	...	...	E., S.W., S.
8.3	8.4	7.1	9.3	8.3	6	1	...	1	3½	2.38	2	
9	10	9	10	9.5	1	...	...	...	...	...	...	S., S.W., S.S.E.
10	9	10	10	9.8	1	...	...	...	...	...	...	S.S.W.
9	8	6	10	8.2	1	...	...	...	...	...	...	W.S.W. 3.
8	8	9	8	8.2	1	...	...	...	...	...	...	S.W., S.S.W. 3.
2	8	4	9	6.0	...	1	...	...	...	...	...	W., S.S.E., E. 3.
6.5	6.7	5.8	8.0		17	12	1	5	11½	3.21	4	S.E., W., and S.W.

Daily Meteorological Table for July, 1854, from observations

	BAROMETER.	OPEN AIR THERMOMETER. FAHRENHEIT.					DIFFERENCE OF DRY AND WET BULBS. FAHRENHEIT.					RELATIVE HUMIDITY.				
	Daily mean.	Sunrise.	9 A.M.	3 P.M.	10 P.M.	Mean.	Sunrise.	9 A.M.	3 P.M.	10 P.M.	Mean.	Sunrise.	9 A.M.	3 P.M.	10 P.M.	Mean.
July 1	29.465	78.0	90.0	98.0	86.5	88.1	2.5	10.5	16.5	5.5	8.7	88	61	47	78	68
" 2	29.515	80.0	90.0	92.0	83.0	86.2	2.5	11.5	11.0	5.0	7.5	89	58	61	79	72
Mean of week	29.447	78.0	88.6	95.6	84.2		3.2	10.0	15.1	6.1		85	65	50	75	
July 3	29.430	78.0	90.0	98.5	84.0	87.6	2.5	11.0	17.0	4.5	8.7	88	60	46	81	69
" 4	29.399	80.0	90.0	96.5	81.5	87.0	5.0	10.0	14.5	4.5	8.5	78	63	52	81	68
" 5	29.397	77.0	86.0	78.0	75.0	79.0	4.5	7.0	4.5	2.0	4.5	80	72	80	90	80
" 6	29.424	73.0	85.0	93.0	77.0	82.0	1.0	7.0	11.5	3.5	5.7	95	72	59	84	77
" 7	29.459	74.0	86.0	96.0	84.5	85.1	2.0	8.0	14.5	6.0	7.6	90	68	51	75	71
" 8	29.514	78.0	89.0	97.0	84.0	87.1	3.5	11.0	17.0	6.5	9.5	83	59	46	73	65
" 9	29.611	70.0	72.0	76.5	68.5	71.7	3.0	6.0	5.5	3.5	4.5	84	71	76	81	78
Mean of week	29.462	76.6	85.4	90.8	79.2		3.1	8.6	10.6	4.4		85	66	59	81	
July 10	29.635	62.0	74.0	80.5	68.0	71.1	4.5	8.0	15.5	5.0	8.2	74	64	39	74	63
" 11	29.576	58.0	76.5	86.0	76.0	74.1	2.5	10.5	16.0	9.0	9.5	84	55	42	60	60
" 12	29.567	68.0	78.5	86.5	73.0	76.5	3.0	11.5	15.5	7.5	9.4	84	52	44	64	61
" 13	29.516	66.0	81.0	90.5	77.5	78.7	3.0	9.0	17.5	7.0	7.9	84	63	40	69	64
" 14	29.503	71.0	83.0	92.0	78.0	81.0	3.0	10.0	17.0	6.5	9.1	85	60	43	71	65
" 15	29.455	72.0	86.0	94.0	81.0	83.2	4.0	11.0	19.0	7.0	10.2	81	58	38	70	62
" 16	29.491	76.0	89.0	96.0	83.5	86.1	3.0	11.0	18.0	7.0	9.7	86	59	42	72	65
Mean of week	29.535	68.0	81.1	89.4	76.7		3.3	10.1	17.0	7.0		83	59	41	69	
July 17	29.588	78.0	90.0	98.5	84.5	87.7	4.0	10.0	19.5	6.5	10.0	82	63	39	74	64
" 18	29.530	78.0	90.0	99.0	85.0	88.0	2.0	10.0	20.0	7.0	9.7	91	63	38	72	66
" 19	29.420	77.5	90.0	99.8	84.5	87.9	3.0	11.0	21.8	8.5	11.1	86	59	35	65	61
" 20	29.356	79.0	90.5	100.5	82.5	88.1	5.5	12.0	24.0	7.0	12.1	76	57	30	71	58
" 21	29.424	76.0	86.0	91.0	76.0	82.2	3.5	11.0	14.0	6.0	8.6	83	58	51	72	66
" 22	29.488	70.5	77.5	90.0	78.5	79.1	3.0	8.0	16.0	6.0	8.2	85	65	44	73	67
" 23	29.471	74.0	84.0	92.0	80.5	82.6	3.0	8.0	17.0	8.5	9.1	86	68	43	64	65
Mean of week	29.468	76.1	89.6	95.8	81.6		3.4	10.0	18.9	7.1		84	62	40	70	
July 24	29.362	76.0	84.0	97.0	80.0	82.2	6.0	10.0	16.5	7.0	9.9	72	60	47	70	62
" 25	29.326	80.0	90.0	93.0	78.0	85.2	6.5	10.0	22.5	9.5	12.1	72	63	28	59	55
" 26	29.602	69.0	76.0	85.0	73.5	75.9	8.5	12.0	20.0	11.5	12.5	58	49	28	49	46
" 27	29.603	66.0	78.0	90.0	77.0	75.2	7.0	11.0	18.5	9.0	11.4	64	54	37	61	54
" 28	29.507	71.5	83.5	98.0	82.5	83.9	5.0	9.5	24.0	11.0	12.4	75	62	28	56	55
" 29	29.445	75.0	90.0	101.0	87.0	88.2	3.5	13.0	21.0	10.0	11.9	83	53	38	62	59
" 30	29.506	80.5	90.5	100.5	85.5	89.2	6.0	13.5	24.5	9.0	13.2	73	52	30	65	55
Mean of week	29.479	74.0	84.6	94.9	80.5		6.1	11.3	21.0	9.6		71	56	34	60	
July 31	29.547	80.0	91.5	100.0	86.5	89.5	4.0	14.0	22.0	9.5	12.4	78	45	38	58	55
Mean of July	29.489	73.9	85.1	93.1	80.1		3.9	10.2	17.1	7.0		82	51	35	64	

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CLEARNESS OF SKY.					NO. OF DAYS			RAIN.			THUNDER-STORMS.	WINDS.
Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Fair.	Variable.	Overclouded.	Days.	Hours.	Quantity.		
10	10	8	7	...	1	...	...	...	...	...	...	E., S.S.E., S.S.W.
10	10	3	9	...	1	...	...	...	...	...	...	S.W., N.W.E.
8.3	9.0	7.0	9.0	...	6	1	...	...	...	...	...	
10	10	8	10	...	1	...	...	...	...	...	...	S.E., S.
10	8	4	9	...	1	...	...	...	...	...	...	S., W., S.
3	7	...	4	...	...	1	...	1	2	0.23	1	S.W., S.E.
8	10	8	9	...	1	...	...	1	½	0.36	1	E.S.E., S.S.E.
10	10	8	10	...	1	...	...	...	...	...	...	S.
10	10	8	5	...	1	...	...	...	...	...	...	S.W., W. 3, W.S.W., N.N.W. 3.
...	...	...	9	...	...	1	...	1	½	0.03	...	N.W. 3, N.N.W. 3.
7.3	7.9	5.1	8	...	5	2	...	...	...	...	...	
10	10	10	10	...	1	...	...	...	...	...	...	N.N.W. 3.
9	10	10	9	...	1	...	...	...	...	...	...	N.N.W., N.
10	10	8	10	...	1	...	...	...	...	...	...	N., N.E.
10	10	9	10	...	1	...	...	...	...	...	...	N.E., E.S.E. 2 2.
1	7	9	10	...	1	...	...	...	...	...	...	E.S.E., S.E.
10	10	9	10	...	1	...	...	...	...	...	...	S.E., E.S.E.
9	7	9	10	...	1	...	...	...	...	...	...	S.S.E., S.E.S.
8.4	9.1	9.1	9.9	...	7	...	...	...	...	...	...	
10	9	6	9	...	...	1	...	...	...	...	...	S.S.E., E.S.E.
10	9	9	9	...	1	...	...	...	...	...	...	S., S.S.E., S.E.
9	9	9	10	...	1	...	...	...	...	...	...	S.S.W., S.E.
10	9	8	7	...	1	...	...	...	...	...	...	S., S.E. 3, W. 3.
9	9	6	10	...	1	...	...	...	...	...	...	W. 2 3 2.
10	9	10	10	...	1	...	...	...	...	...	...	N., N.W. 3.
5	1	6	9	...	...	1	...	...	...	...	...	N.N.W., N., N.E.
9	8	7.7	6.3	...	5	2	...	...	...	...	...	
9	8	6	9	...	...	1	...	1	¾	0.30	1	E.N.E., S.E. 4, S.
9	9	5	10	...	1	...	...	...	...	...	...	S.W., W. 3., N.W. 4 3.
2	9	10	10	...	1	...	...	...	...	...	...	N.N.W.
10	10	9	10	...	1	...	...	...	...	...	...	E.N.E., S., N.E.
10	9	9	10	...	1	...	...	...	...	...	...	S.S.E.
10	10	9	9	...	1	...	...	...	...	...	...	S., W. 3, S.S.E.
4	10	10	10	...	1	...	...	...	...	...	...	S.S.W., S.S.E. 3, S.E. 3.
7.7	9.3	8.3	9.7	...	6	1	...	4	3¾	0.92	3	S., S.W. 3, S.S.W. 3.
...	...	...	...	...	1	...	...	...	...	...	...	
8.3	8.7	7.5	9.1	...	26	5	...	4	3¾	0.92	3	S., S.W. 3, S.S.W. 3.

Daily Meteorological Table for August, 1854, from observations

	BAROMETER.	OPEN AIR THERMOMETER. FAHRENHEIT.					DIFFERENCE OF DRY AND WET BULBS. FAHRENHEIT.					RELATIVE HUMIDITY.				
	Daily mean.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.
Aug. 1	29.504	80.5	93.0	101.0	86.0	90.0	5.0	16.0	20.5	11.0	13.1	78	46	38	58	55
" 2	29.482	80.5	90.0	98.0	86.0	88.6	9.5	14.0	20.0	6.0	12.4	61	50	38	76	56
" 3	29.420	79.0	92.0	99.0	75.0	86.2	9.0	18.5	26.0	3.5	14.2	62	39	25	83	52
" 4	29.482	72.0	78.0	86.0	75.0	77.7	2.5	8.0	21.5	9.5	10.4	88	65	25	58	59
" 5	29.535	63.5	80.5	90.0	76.0	77.5	3.5	11.0	20.0	8.0	10.6	80	55	32	65	58
" 6	29.480	70.5	84.5	96.5	80.0	82.8	5.0	12.0	27.5	10.5	14.0	75	54	19	57	51
Mean of week	29.493	75.1	87.1	95.9	80.6		5.5	13.4	22.5	8.3		74	51	31	65	
Aug. 7	29.524	69.5	73.0	84.0	69.0	73.9	4.0	9.0	15.5	9.5	9.5	82	59	42	54	59
" 8	29.550	58.0	72.0	83.0	70.5	70.8	3.0	9.0	18.5	9.0	9.9	81	58	32	58	57
" 9	29.413	64.0	68.0	74.0	71.5	69.4	5.0	7.0	6.5	4.0	5.6	72	66	70	81	72
" 10	29.355	67.0	81.0	90.5	79.0	79.4	3.0	8.0	14 5	7.5	8.2	84	67	49	67	67
" 11	29.352	72.0	84.0	98.5	84.5	84.7	3.0	9.0	18.0	6.0	9.0	85	64	43	76	67
" 12	29.386	81.0	80.0	84.0	78.0	80.7	7.0	8.0	7.5	4.5	6.7	70	66	70	79	71
" 13	29.457	73.5	85.0	96.5	83.0	84.5	3.0	8.0	19.5	9.5	10.0	85	68	39	62	63
Mean of week	29.434	69.4	77.6	87.2	75.1		3.9	8.3	14.3	7.1	8.4	80	64	49	68	
Aug. 14	29.441	72.0	82.0	98.0	82.5	83.6	6.5	11.0	17.0	7.5	10.5	69	56	46	69	60
" 15	29.543	71.5	75.0	80.5	73.5	75.1	1.0	4.0	8.0	3.0	4.0	95	82	66	85	82
" 16	29.529	67.0	74.0	83.0	71.0	73.7	4.0	7.0	13.0	8.0	8.0	79	60	50	62	63
" 17	29.547	66.5	73.0	81.0	69.5	72.5	5.5	12.0	15.5	9.5	10.6	72	46	39	54	53
" 18	29.497	65.0	74.0	85.0	70.0	73.5	5.0	11.0	19.0	7.0	10.5	73	51	32	66	55
" 19	29.482	61.0	76.0	89.0	74.5	75.1	3.0	8.0	19.0	7.0	9.2	82	65	35	68	62
" 20	29.539	69.0	81.0	93.0	78.0	80.2	3.5	9.0	21.5	8.0	10.5	81	63	31	65	60
Mean of week	29.511	67.4	76.4	87.1	74.1		4.1	8.9	16.1	7.1	9.0	79	60	43	67	
Aug. 21	29.561	69.5	82.5	93.0	78.0	80.7	3.5	10.0	20.5	6.0	10.0	82	59	33	73	62
" 22	29.546	70.5	84.5	95.5	80.0	82.6	3.0	12.0	21.5	6.5	10.7	85	54	32	72	61
" 23	29.505	72.0	85.0	96.5	80.5	83.5	3.0	11.0	20.5	11.0	11.9	86	57	35	55	58
" 24	29.536	75.0	85.0	92.5	82.0	83.6	5.0	12.0	16.5	7.0	10.1	77	55	44	71	62
" 25	29.508	76.0	86.0	89.0	79.5	82.6	4.0	12.0	12.5	7.0	8.9	82	55	54	70	65
" 26	29.502	75.0	86.0	90.0	79.0	82.5	3.0	11.0	15.0	6.0	8.7	86	58	47	73	66
" 27	29.508	76.0	87.0	78.0	78.5	79.9	3.0	12.0	4.0	2.0	5.2	87	55	82	91	79
Mean of week	29.524	73.4	85.1	90.6	79.6		3.5	11.4	15.8	7.9	9.4	84	56	47	72	
Aug. 28	29.502	75.0	86.0	96.0	81.5	84.6	2.5	7.0	18.5	5.5	8.4	88	73	41	77	66
" 29	29.489	76.5	88.0	98.5	84.5	86.9	2.5	10.0	18.0	7.5	9.5	88	62	43	70	66
" 30	29.491	78.0	89.0	100.5	84.5	88.0	3.0	10.0	22.5	10.5	11.5	86	62	34	59	60
" 31	29.496	79.0	91.5	99.0	85.0	88.6	6.5	14.0	20.5	10.5	12.9	71	51	37	59	54
Mean of Aug.	29.489	71.8	82.1	91.0	78.2		4.2	10.3	17.4	7.3		79	58	40	68	

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CLEARNESS OF SKY.					NO. OF DAYS			RAIN.			THUNDER-STORMS.	WINDS.
Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Fair.	Variable.	Overclouded.	Days.	Hours.	Quantity.		
10	10	5	10	9	...	1	...	...	...	...	...	S.W., W. 3, S.E.
10	8	4	8	7	...	1	...	...	...	...	...	W., S.W., S.E.
8	9	5	9	7	...	1	...	...	...	...	1	W.S.W. 3, W. 4, W.N.W.
7	6	9	10	8	1	...	...	...	...	...	...	W., N.W. 3 2.
10	10	10	10	10	1	...	...	...	...	...	...	N.W., N.E., E.N.E.
10	10	7	7	8	1	...	...	...	...	...	...	S.E., N.E., N.N.E.
7.9	7.6	5.7	7.7		4	3	...	...	...	...	1	
4	4	5	7	5	...	1	...	...	...	...	...	N. 3, N.E. 3, N. 3 4.
10	10	6	4	7	...	1	...	...	...	...	...	N., E., E.N.E. 3 2.
...	...	...	5	1	...	1	...	1	3	0.07	...	E., N.E., E.
8	10	10	10	9	1	...	...	...	...	...	...	E.S.E., N.E., N.N.W.
8	5	8	6	7	...	1	...	...	...	...	...	N., E., S.E.
...	...	1	8	2	...	1	...	...	...	...	...	S., N., E., S.W.
6	9	9	10	8	1	...	...	...	...	...	...	W., N.N.W.
5.1	5.4	5.6	7.1	5.6	2	5	...	1	3	0.07	...	
8	9	9	7	8	1	...	...	...	...	...	...	E.N.E, N.E., E.
...	1	3	10	4	...	1	...	1	3½	1.18	1	S., N.W., N., W.
5	4	2	...	3	...	1	...	...	...	...	...	N., E., N.W. 3.
4	6	8	10	7	...	1	...	...	...	...	...	N.N.W. 2 3 2.
10	10	10	10	10	1	...	...	...	...	...	...	N.N.W., N.N.E.
10	9	10	10	10	1	...	...	...	...	...	...	N.E., E.
10	10	10	10	10	1	...	...	...	...	...	...	E., S.E.
6.7	7.0	7.4	8.1	7.6	4	3	...	1	3½	1.18	1	
10	10	10	9	10	1	...	...	...	...	...	...	S.S.E.
9	9	10	10	9	1	...	...	...	...	...	...	S., S.E.
9	9	8	10	9	1	...	...	...	...	...	...	E. 2 3, S.E.
2	8	1	7	4	...	1	...	...	...	...	...	S., E.S.E., S.S.E.
...	2	...	1	1	...	1	...	...	...	...	...	S.S.E., W.
3	7	2	8	5	...	1	...	...	...	...	...	E.S.E., S.W.
6	5	2	10	6	...	1	...	1	1	0.55	1	S.W., W., N.W., S.E.
5.6	7.1	4.7	7.9	6	3	4	...	1	1	0.55	1	
10	10	7	10	9	1	...	...	...	...	...	...	E. 2 3 2.
8	8	9	10	9	1	...	...	...	...	...	...	S.S.W.
10	9	8	10	9	1	...	...	...	...	...	...	S.S.W.
10	8	9	9	9	1	...	...	...	...	...	...	S.S.E., S.E.
7	7.5	6.2	8.2	...	16	15	...	3	7½	1.80	3	E. and S.E.

Daily Meteorological Table for September, 1854, from observations

	BAROMETER CORRECTED.	OPEN AIR THERMOMETER. FAHRENHEIT.					DIFFERENCE OF DRY AND WET BULBS. FAHRENHEIT.					RELATIVE HUMIDITY.				
	Daily mean.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.
Sept. 1	29.494	78.0	90.0	98.5	83.5	85.0	6.0	15.0	26.5	12.5	15.0	73	47	22	52	48
" 2	29.504	76.0	87.0	96.0	82.0	85.2	6.5	14.0	22.5	10.5	13.4	71	49	30	58	52
" 3	29.492	76.0	88.0	98.5	83.0	88.9	4.0	13.0	22.5	9.5	12.2	82	52	31	62	57
Mean of week	29.495	79.6	88.5	98.1	83.4		4.4	11.9	21.6	9.5		80	57	34	62	
Sept. 4	29.434	77.0	87.0	97.5	81.0	85.6	5.5	12.0	19.5	7.0	11.0	76	55	39	71	60
" 5	29.425	75.5	85.5	89.0	80.0	82.5	4.5	9.5	14.0	9.0	9.2	79	60	50	63	63
" 6	29.477	75.0	82.0	83.5	76.0	79.1	5.0	10.0	10.5	4.0	7.4	77	59	59	82	69
" 7	29.498	75.0	81.0	89.5	79.5	81.2	4.0	8.0	15.0	7.5	8.6	82	67	46	67	65
" 8	29.271	73.0	86.0	99.5	83.0	85.4	3.0	11.0	24.5	8.5	11.7	85	58	29	65	59
" 9	29.227	77.5	83.0	77.5	70.0	77.0	7.0	8.0	5.5	3.0	5.9	69	68	76	85	74
" 10	29.369	68.5	72.5	84.0	73.0	74.5	5.0	8.5	15.5	7.5	9.1	74	60	42	65	60
Mean of week	29.386	74.5	82.4	88.6	77.5		4.9	9.6	14.9	6.6		77	61	49	71	64
Sept. 11	29.291	68.0	80.0	93.5	73.0	78.6	3.5	9.5	16.5	1.5	7.7	81	60	45	93	70
" 12	29.444	72.0	72.0	80.0	74.0	74.5	1.5	3.0	7.5	5.0	4.2	92	86	68	77	81
" 13	29.491	70.5	77.0	76.5	70.0	73.5	2.5	6.0	4.0	1.0	3.4	87	73	82	94	84
" 14	29.529	70.0	75.0	82.0	64.5	72.9	2.0	5.0	10.5	4.0	5.4	90	77	58	78	76
" 15	29.720	60.0	68.0	74.5	61.0	65.9	2.5	5.0	12.5	4.5	6.1	79	74	46	73	68
" 16	29.691	53.0	63.0	76.5	64.0	64.1	2.0	6.0	14.5	6.0	7.1	86	67	40	67	65
" 17	29.574	58.0	70.0	86.0	74.0	72.0	4.5	9.0	14.0	5.5	8.2	72	57	48	74	63
Mean of week	29.534	64.5	72.1	81.3	68.6		2.6	6.2	11.4	3.9		84	71	55	80	72
Sept. 18	29.478	72.5	78.0	78.5	72.0	75.2	2.5	7.0	6.5	2.0	4.5	88	70	71	90	80
" 19	29.523	70.5	74.0	78.5	63.0	71.5	1.5	3.0	8.5	10.5	5.9	92	86	63	45	71
" 20	29.673	52.5	58.0	68.5	58.0	59.3	4.0	6.0	12.0	5.0	6.7	73	63	42	70	62
" 21	29.802	52.0	60.0	68.0	56.5	59.1	2.5	8.0	12.0	4.5	6.8	83	55	42	71	63
" 22	29.831	52.5	64.0	75.5	61.0	63.2	3.5	9.0	17.0	5.5	8.7	76	53	31	69	57
" 23	29.622	58.0	69.0	82.0	66.5	68.9	5.5	9.0	13.5	4.0	8.0	67	56	46	79	63
" 24	29.372	61.0	75.0	85.0	69.0	72.5	3.5	4.5	11.0	3.0	5.5	79	78	57	85	75
Mean of week	29.622	59.9	68.3	76.6	63.7		3.3	6.6	11.5	4.9		80	66	50	73	67
Sept. 25	29.281	65.0	78.0	70.0	73.0	76.5	3.0	6.0	18.0	3.0	7.5	84	73	38	86	70
" 26	29.359	68.0	77.5	86.5	70.0	75.5	2.0	5.5	14.5	3.0	6.2	89	76	47	85	74
" 27	29.450	66.0	78.0	88.0	74.0	76.5	1.0	8.0	15.5	3.0	6.9	94	65	44	86	72
" 28	29.557	68.0	76.5	88.5	73.0	76.5	2.0	6.5	16.0	5.0	7.4	89	71	43	76	70
" 29	29.629	67.0	76.0	87.5	72.0	75.6	6.0	10.5	17.0	10.0	10.9	68	54	40	54	54
" 30	29.572	65.0	70.0	84.5	75.5	73.7	6.0	8.0	15.5	8.0	9.4	67	62	43	65	59
Sunday Oct. 1	29.407	72.0	75.5	79.0	71.0	74.4	3.5	4.5	6.5	2.0	4.1	82	79	71	89	80
Mean of week	29.465	67.3	75.9	86.3	72.6		3.4	7.0	14.7	4.9		82	69	47	77	68
Mean of Sept.	29.503	67.4	76.0	84.8	71.8		3.7	8.1	14.4	5.8		81	64	46	72	

made in St. Louis. By GEORGE ENGELMAN, M. D.

CLEARNESS OF SKY.					NO. OF DAYS			RAIN.			THUNDER-STORMS.	WINDS.
Sunrise.	9 A. M.	3 P. M.	10 P. M.	Mean.	Fair.	Variable.	Overclouded.	Days.	Hours.	Quantity.		
10	9	9	9	9	1	...	...	...	...	...	...	S.E., S.S.W., S.S.E.
10	9	8	10	9	1	...	...	...	...	...	...	S., S., S.S.E.
10	9	8	10	9	1	...	...	...	...	...	...	S., S.S.E.
9.7	8.9	8.3	9.7		7	...	...	...	...	...	...	
10	9	7	9	9	1	...	...	1	½	0.20	1	S., S.E.
10	9	4	10	8	1	...	...	...	...	...	...	S.W., S., S.S.W. 3, S.E.
5	7	1	1	3	...	1	...	...	...	...	...	S., S.W., N., N.N.W. 3.
4	4	8	10	6	...	1	...	...	...	...	...	N. 3 2, E.
10	8	8	8	8	1	...	...	...	...	...	...	E., W.S.W. 3 2,
10	8	3	...	5	...	1	...	...	...	...	...	W. 3, W.N.W. 4, N.W. 3.
9	8	3	10	7	1	...	...	...	...	...	...	N., N.N.W., N.E.
8.3	7.6	7.9	6.9	7	4	3	...	1	½	0.20	1	
9	6	3	1	5	...	1	...	1	1	0.73	1	E., W. 3, S.W. 3 2.
...	...	6	6	3	...	1	...	1	½	0.04	...	W. N.N.W., N.
...	4	...	9	3	...	1	...	1	½	0.07	1	N.N.E., E., W., S.E.
2	5	6	10	6	...	1	...	1	1	0.10	1	S.W., W. 3, N.W. 3.
...	...	9	10	5	...	1	...	...	...	...	...	N.W., N. 2 2.
10	9	10	10	10	1	...	...	...	...	...	...	N.N.E., N. 3, N.E.
10	9	9	10	9	1	...	...	...	...	...	...	E.N.E., E.
4.4	4.7	6.1	8.0	6	2	5	...	4	3	0.94	3	
3	1	...	5	2	...	1	...	1	2½	0.20	1	S. 2 3 2.
...	...	...	10	2	...	1	...	1	2	0.10	...	S.W., W., N.W. 3.
8	8	9	10	9	1	...	...	...	...	...	...	N.W. 2, N.N.W. 3 2.
10	9	10	10	10	1	...	...	...	...	...	...	N., N.E. 3 2, N.
10	10	8	10	9	1	...	...	...	...	...	...	N.N.E., N.E. 3, E.
5	6	6	...	4	...	1	...	...	...	...	...	E.S.E, S.E.
...	2	8	10	5	...	1	...	...	...	...	...	S.E.
5.1	5.1	6.0	8.0	6	3	4	...	2	4½	0.30	1	
8	8	5	10	8	1	...	...	...	...	...	...	S., S.W., S.E. 3.
10	10	5	9	8	1	...	...	...	...	...	...	S., S.E.
6	8	9	10	8	1	...	...	...	...	...	...	S.S.E.
9	10	10	10	10	1	...	...	...	...	...	...	N., N.N.W., N.N.W.
10	10	7	10	9	1	...	...	...	...	...	...	N., E. 2 2.
4	4	...	...	2	...	1	...	...	...	...	...	E.
...	2	4	5	3	...	1	...	...	...	...	...	
6.7	7.4	5.7	7.7	7	5	2	...	...	...	...	...	
6.7	6.6	6.0	7.9					7	8	1.44	5	S.E., next S. and E.

NOTES TO METEOROLOGICAL TABLES.

To reduce the space of the tables, we have given but the daily barometrical mean of four observations made at hours corresponding to the thermometrical and other observations.

The instrumental observations in all the tables of our report were made by Dr. George Engelman, of St. Louis, the necessary calculations are our own. Any error in these latter must be credited to us.

The barometer is corrected for temperature, and is in English inches. Location of barometer, corner of 5th and Elm Streets, St. Louis, 76 feet above the City Directrix, or 106.5 above low-water mark.

The calculation of relative humidity is made out by Haeghen's calculations, as published by the Smithsonian Institute, the centigrade scale as adopted in the institute tables being converted to Fahrenheit to meet the scale of the wet and dry bulb thermometers as given.

The scale of wind, as indicated by the small figures beside the cardinal and subsidiary points, means, 1, the lightest breeze; 2, an ordinary wind; 3, high wind; 4, storm or gale; 5, a violent gale, squall, or hurricane. Where no number is given, the wind is moderate, and would have to be designated by the figures 1 or 2.

The scale of relative humidity, from 0 to 100°, means, the former, the most complete absence of humidity; the latter, the most complete saturation.

To readers unfamiliar with the elements of meteorology, these explanations may be necessary.

Dew-point.—This will be found to be a few degrees below the degree of relative humidity. The following formula, however, will give it very accurately. Multiply the difference between the wet and dry bulbs by 103, divide this result by the wet-bulb temperature, and subtract the quotient from the temperature of the naked or dry bulb; the remainder will be the dew-point. This formula is founded on experiments from 20° Fahr. to 80°, and does not differ at either extreme from the most careful experiments. (See the Circular prepared by the Joint Committee of the Franklin Institute and the Philosophical Society, of Philadelphia.) For further information on this point, and on that of the tension of vapor, see Drake's work, vol. i. p. 602–3.—R.

APPENDIX.

NOTE ON THE SUPPOSED INTERFUSION OF MEASLES AND SCARLET FEVER.

Reports of cases supposed to show the amalgamation of these two zymotic poisons, were made to us during or subsequent to the epidemic prevalence of measles in St. Louis in 1852, and of scarlet fever in 1853 and 1855. We were not witness to any of the cases, and therefore can speak of them only in the general terms they were described to us. Their precursory stage presented the catarrhal symptoms of measles; to these were attached the anginose complication of scarlet fever; efflorescence appeared on the third or fourth day, but not so clearly defined as that of measles alone, nor yet that of scarlet fever, but the mingling of the features of both eruptions; it would present the large patches of scarlet fever with the crescentic outline of measles; roughness of the surface was perceptible, and the hue of the eruption was intermediate of the two diseases. Desquamation of the cuticle was noticed in some instances; the eruption lasted from two to four days. Dr. George Engelman's attention was particularly given to the subject of the supposed mingling or mutual modification of these eruptive fevers, and we present in brief the conclusions he entertains on the subject.

"Careful observation of the course of a number of epidemics of the eruptive fevers referred to, has led me to believe that the views generally accepted in regard to them are in some respects erroneous, and that our knowledge of these diseases is yet very incomplete.

"I have been brought to the conviction that an epidemic of scarlet fever can, and often does, change gradually into one of measles, and that the transition form is the disease that, by the German, but not by the English writers, is alluded to under the term 'Rubeola,' and which is here occasionally popularly distinguished as 'French

measles,' and in some parts of Germany is known to the people by the title of 'Roethela.' It is here not recognized by the profession by any distinct title.

"This form of eruptive fever appears to have been overlooked by physicians and writers in this country and in England; while in Germany it is considered a variety of the measles proper, or more commonly as a variety of scarlet fever. Some pathologists have supposed it to be a hybrid generated where epidemics of scarlet fever and measles meet.

"I have no doubt, from my observation, that such a disease as the 'Rubeola' of the German writers exists, and that it is neither a hybrid of both the others, nor a variety of one or the other, but a transition form between them.

"The most curious fact in the history of these three different forms of disease, is that each form protects the system from a second attack similar to it, but not perfectly from attacks of the other, so that a subject may have all three forms one after the other, and this further accounts for the frequent observation of a second attack of measles or of scarlet fever, which every physician has seen or heard of. One of the diseases in these cases undoubtedly was the rubeola. I have attended several families in this city, all the children of which had all three forms.

"The principal characters of these three different forms are:—

"1st. Scarlatina. Eruption uniform over the whole body, or in large irregular blotches, not elevated above the surface, or with many *miliaria* like papulæ. Mucous membranes of the organs of deglutition affected, those of the organs of respiration primarily unaffected. Desquamation of cuticle generally in large laminæ or patches. Consecutive diseases principally parotitis and anasarca.

"2d. Rubeola. Eruption in spots (generally large) of an irregular angular shape, of a high color, elevated above the surface; redness disappearing under pressure of the finger, and generally reappearing first in the circumference. Mucous membranes of the organs of deglutition, respiration and vision affected; angina, cough, and coryza present. Desquamation furfuraceous, often slight, or none at all. Consecutive diseases, probably the same as those of both the other forms, as the eruption approaches the one or the other.

"3d. Morbilli. (I find it necessary to restore or rather limit this name to the 'Measles,' and the name of Rubeola to the second form described above.) Eruption in spots (generally smaller than

the foregoing), circular, or somewhat angular, of a paler rose color, elevated above the surface only in the centre, and redness reappearing there first after pressure with the finger. Mucous membranes of respiration and vision affected; those of deglutition free. Desquamation furfuraceous, generally slight, or entirely absent. Consecutive diseases always affections of the chest; pleuritis with exudations; pneumonia, or asthma.

"It is evident that intermediate forms must be common, and physicians not rarely disagree as to the nature of the disease; some claiming a certain case as scarlet fever, while others name it measles.

"In the winter of 1852–3, we had a well characterized, severe and malignant epidemic of scarlatina in St. Louis, as it was observed over a great part of the United States. In May and June, 1853, the scarlet fever was very characteristic, but the cases much milder.

"In the winter of 1853–4, the disease assumed the form of rubeola, approaching more to scarlet fever, yet the eruption was spotted, the angina characteristic; the consecutive diseases, those of scarlet fever. In the Medical Society it was spoken of as an epidemic of measles, when I alluded to its character approaching scarlet fever. But as spring advanced, the disease assumed more and more the form of rubeola, and finally became that of morbilli (measles).

"My observations in St. Louis in the years 1853 and 1854, induced me to consider these as three forms of disease, which occasionally change into one another. In other countries, or other climates, all of these forms may not exist, or their characters may be more distinctly marked, and transitions may never occur; but here all, I believe, who have observed with eyes open, will arrive at the same conclusions as myself. But to the facts observed in 1854.

"In May of that year, a family of two children (on Third Street) had that form of spotted scarlet fever approaching rubeola, prevailing since winter. In the last days of that month, another family of two children, living a few doors from and in frequent contact with the first, were similarly attacked; in both subjects the character of the eruption was that of spotted scarlet fever like that of the first children; the elder one had more blotches than spots with an ulcerated sore throat, and afterwards anasarca; the younger child had ulcerative angina and cough. At the same time, the last of May, the eldest of four children of another family (on Seventh Street), friends of the first, and in frequent contact with them, was attacked with what I pronounced spotted scarlet fever, or rubeola; the tonsils were much inflamed and ulcerated; at the same time the child

suffered from tracheal symptoms and conjunctivitis. The other three children of the family were attacked in the next six weeks, one after the other; the angina became less and less marked, with the catarrhal symptoms more and more prevalent in each consecutive case, and the last of the children had unmistakable measles (morbilli). The children of the first family had by this time recovered, and being considered exempt from contagion, often visited their sick friends, when one of them was again taken with an eruptive fever which now had all the symptoms of measles (morbilli), and was pronounced such by the physician, Dr. Wislizenus; the other two families I attended myself. We find here cases of scarlatina in the first family bringing on scarlatina in the second, rubeola in the third, and this gradually changing into morbilli, which in turn brings on morbilli in the first family.

"It only remains to state that the morbillose character remained prevalent through the summer, until all eruptive disease disappeared. Late in the autumn cases of scarlet fever reappeared, but assumed through the winter the form of rubeola, generally called by our physicians measles, but distinguished by the symptoms enumerated above. I have seen the disease in a child I had treated only nine months before, for a well-defined attack of morbilli. As spring advanced, the eruption assumed more and more the form of measles proper, though I have seen a few perfectly distinct cases of true scarlet fever also, and even some very malignant and rapidly fatal cases of this form have occurred here at the same time."

Stage of Water in the Mississippi River at St. Louis, during the Great Rise in June, 1851. Time of observation, 6 P. M. daily.

	Below City Directrix.	Above Directrix.	Daily fall.	Daily rise.	
	Feet.			Feet.	
June 3	4.55	...	...	...	
" 4	3.74	...	...	0.81	
" 5	2.50	...	...	1.24	
" 6	0.94	...	...	1.56	
" 7	...	0.70	...	0.76	
" 8	...	1.75	...	1.05	
" 9	...	2.38	...	0.63	
" 10	...	2.80	...	0.42	Greatest height of water.
" 11	...	2.72	0.08	...	
" 12	...	2.40	0.32	...	
" 13	...	2.15	0.25	...	
" 14	...	2.00	0.15	...	
" 15	...	2.05	...	0.05	
" 16	...	2.00	0.05	...	
" 17	...	1.66	0.34	...	
" 18	...	1.70	...	0.04	
" 19	...	1.75	...	0.05	
" 20	...	2.00	...	0.25	
" 21	...	2.41	...	0.41	
" 22	...	2.45	...	0.04	
" 23	...	2.30	0.15	...	
" 24	...	2.08	0.22	...	
" 25	...	1.88	0.20	...	
" 26	...	1.70	0.18	...	
" 27	...	1.58	0.12	...	
" 28	...	1.38	0.20	...	
" 29	...	1.16	0.22	...	
" 30	...	1.05	0.11	...	
July 1	...	0.96	0.09	...	
" 2	...	0.93	0.03	...	
" 3	...	0.93	...	...	River at a stand.
" 4	...	0.70	0.23	...	
" 5	...	0.66	0.04	...	
" 6	...	0.70	...	0.04	
" 7	...	1.85	...	1.15	
" 8	...	0.75	1.10	...	
" 9	...	0.40	0.35	...	
" 10	...	...	0.40	...	Level of directrix.
" 11	0.44	...	0.44	...	
" 12	0.74	...	0.30	...	
" 13	1.00	...	0.26	...	
" 14	1.22	...	0.22	...	
" 15	1.80	...	0.58	...	
" 16	2.10	...	0.30	...	
" 17	2.65	...	0.55	...	
" 18	2.85	...	0.20	...	
" 19	3.20	...	9.35	...	
" 20	4.00	...	0.80	...	
" 21	4.55	...	0.55	...	

The highest stage of water, June 10, 1851, was 4 feet 9½ inches below the highest attained in the great rise on June 27, 1844.

The point of observation and of comparative measurement—the City Directrix—is the curb-stone on the river bank, 30.5 feet above low-water mark.

Average Rain in St. Louis in 18 *Years, from* 1837 *to* 1854.

	Average.	Minimum.	Maximum.
January	1.88 in.	0.45, 1842	4.18, 1849
February	2.31	0.56, 1849	6.74, 1851
March	3.43	0.79, 1853	7.66, 1852
April	4.00	2.28, 1845 1852	7.68, 1850
May	4.83	2.38, 1841	11.26, 1844
June	6.15	1.47, 1850	17.07, 1848
July	3.79	0.84, 1846	9.44, 1849
August	4.09	0.45, 1844	9.74, 1848
September	2.50	0.30, 1844	5.81, 1849
October	3.26	0.96, 1853	8.74, 1847
November	2.96	1.10, 1845	8.63, 1847
December	2.66	0.71, 1840	10.90, 1846
Total	42.12	30.89, 1853	65.36, 1848*
May, June, and July together. Our rainy season.	14.17	7.14, 1841	30.54, 1848†

Altitude of St. Louis.—Nicollet, in his report (1840), calculates the elevation above the gulf of the low-water mark, at 382 feet, but the city Engineer's low-water mark was at that time about two feet higher than it is at present assumed to be, viz: then 28.5 feet, now 30.5 feet below the City Directrix.

City Directrix (*i. e.* curb-stone intersection on the river bank, between Market and Walnut Streets), therefore—

Vide Nicollet, is, above Gulf of Mexico . . . . . 410.5 feet.
Same, per Wislizenus (Report, Senate Document, published 1848 or 9), is 420 "

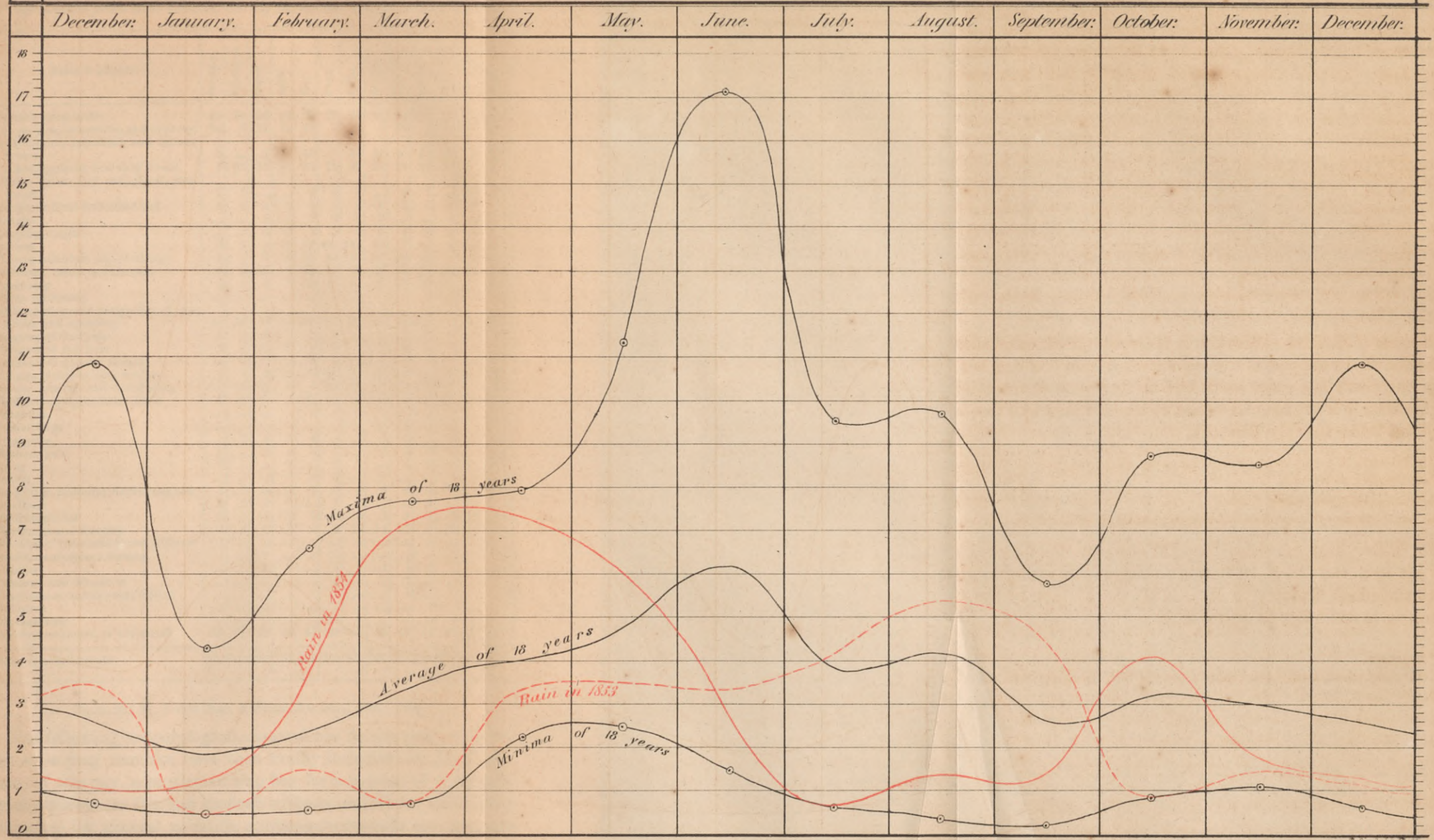
Dr. G. Engelman calculates (from 282 corresponding observations per his own and Dr. E. H. Barton's compared barometers, which were made from January to May, 1854), the altitude of the City Directrix at 405.6 feet above the Gulf.

* Engelman.

† Our rainy season usually commences about the 25th April, and lasts until 10th July.

Diagram showing the Average quantities of Rain at St. Louis, Mo. Lat 38°37' Long 90°15' for the years 1837 to 1851.

Place of Observation 25 feet above the mean level of the Mississippi and 481 feet above the Gulf of Mexico.



EXTRACT FROM ST. LOUIS MEDICAL AND SURGICAL JOURNAL, JULY, 1852.

Table showing the Mortality in St. Louis, for the year 1851, *with the number of Deaths from each Disease, during the several months of the year.*

Name of Diseases.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Phthisis pulmonalis	12	10	20	16	21	13	20	16	15	18	22	21	204
Pneumonia, bronchitis, and pleurisy	16	8	21	13	19	7	11	6	13	9	10	17	150
Intermittent, remittent, and bilious fevers	5	...	1	1	10	7	26	28	35	35	13	8	169
Typhus, typhoid, and ship fevers.	8	38	18	18	18	15	39	24	29	32	26	15	280
Scarlet fever and malignant sore throat	1	1	...	...	3	1	1	...	2	1	...	3	13
Puerperal fever and child-bed	4	4	4	2	2	5	4	6	3	3	4	7	48
Measles	...	...	4	5	2	2	6	2	...	...	6	...	27
Hooping-cough	...	...	1	3	1	2	5	2	1	4	2	...	21
Cholera	2	1	1	9	49	430	231	45	9	...	3	...	780
Cholera infantum and teething	4	1	3	5	14	68	115	79	24	26	5	3	347
Diarrhœa, acute and chronic	6	5	12	6	18	39	50	50	28	30	30	12	286
Dysentery	4	4	4	2	12	33	47	63	28	28	21	11	257
Colica pictonum	...	...	...	...	...	...	...	...	1	...	...	...	1
Inflammation and congestion of the brain, and apoplexy	11	10	8	11	24	15	47	32	29	12	8	8	215
Diseases of the heart	3	2	3	2	...	2	...	5	3	3	3	2	28
Diseases of the liver	2	2	...	2	3	1	1	2	1	3	7	2	26
Ascites and general dropsy	...	3	2	6	3	1	5	2	3	6	9	4	44
Old age, debility, and decline	8	9	8	10	20	24	40	33	15	15	13	11	206
Cramp, spasms, and convulsions	10	10	16	2	8	20	29	18	15	11	11	5	155
Stillborn and premature birth	8	13	7	6	21	21	20	19	8	10	11	12	156
Sunstroke	...	...	...	...	1	3	6	6	4	...	...	...	20
Hemorrhage	...	...	...	1	...	...	...	...	2	...	2	1	6
Erysipelas	...	2	3	3	6	1	1	1	3	...	2	1	23
Mania-a-potu	3	...	3	4	5	1	...	4	1	3	1	...	25
Croup	2	1	...	2	...	1	1	...	3	5	4	7	26
Cancer	...	...	...	2	...	1	1	1	...	...	1	1	7
Casualties, including explosions, &c.	1	2	14	3	2	8	4	6	8	1	12	7	68
Smallpox	1	2	1	1	...	1	...	...	...	1	...	1	8
Hydrocephalus	3	1	2	2	1	4	5	3	1	1	2	2	27
Marasmus and atrophy	1	4	2	3	1	5	18	14	5	3	10	1	67
Diseases of the bladder and kidneys	1	...	1	...	...	...	1	...	...	1	...	1	5
Scrofula and spinal disease	1	...	1	...	...	...	...	...	...	...	...	...	2
Tetanus	...	...	...	1	...	1	1	1	1	2	...	...	7
Poisoned and felo-de-se	...	...	...	...	1	1	...	1	1	...	...	2	6
Constipation and intussusception	...	...	...	...	...	...	...	1	1	...	...	...	2
Influenza	...	...	...	...	...	...	...	...	...	1	...	...	1
Elephantiasis	...	...	...	...	...	...	...	...	...	...	1	...	1
Diseases unknown or not stated	16	25	22	32	44	49	104	50	47	39	43	36	507
Total for each month	133	158	182	173	309	782	839	520	339	303	282	201	4221

FROM THE ST. LOUIS MED. & SURG. JOURNAL, JULY, 1852.

The following meteorological observations for the year, with the accompanying remarks, have been kindly furnished by Dr. Engelman, of this city, a gentleman who has for a number of years paid great attention to this and kindred subjects, and whose well-known character for general scientific attainments is a sufficient guaranty for their accuracy.

We regret not having received them before the first part of the article was in type, that we might have compared the state of the weather with the prevalence of disease, but this the reader can do for himself by reference to the several tables.

Meteorological Table for St. Louis, during the Year 1851.

1851.	BAROMETER.	THERMOMETER.					
	Mean.	Mean.	Lowest.	Highest.	Range.	GREATEST CHANGE IN 24 HOURS.	
						Amount.	Date.
January	29.610	36.2	1.0	63.5	62.5	*f.* 40.0	28—29
February	29.653	38.8	14.0	69.5	55.5	*f.* 40.5	26—27
March	29.593	48.3	23.0	78.0	55.0	*r.* 29.5	21
April	29.514	52.8	34.0	76.0	42.0	*f.* 37.0	4—5
May	29.447	69.0	29.0	92.0	63.0	*r.* 33.0	2
June	29.426	72.9	54.5	92.0	37.5	*r.* 24.0	10
July	29.420	78.0	54.0	97.0	43.0	*r.* 25.0	11
August	29.478	75.6	61.0	94.0	33.0	*f.* 25.5	21—22
September	22.575	72.5	37.0	94.0	57.0	*f.* 23.0	13—14
October	29.406	56.1	26.5	81.5	55.0	*f.* 31.5	17—18
November	29.501	41.1	25.0	64.5	39.5	*r.* 29.0	4
December	29.637	30.5	2.5	64.0	66.5	*f.* 37.5	14—15
Whole year	29.522	56.0	2.5	97.0	99.5	*f.* 40.5	*f.* 26–7

STATE OF THE WEATHER.

1851.	PREVAILING WINDS.	Mean clearness of the sky.	NUMBER OF DAYS.				Quantity of rain and snow in inches.	Number of thunder-storms.
			Fair.	Variable.	No sunshine.	Rain or snow.		
January	W., then S.E.	6.1	15	16	0	3	0.61	1
February	W., then S.E.	4.5	11	7	10	10	6.74	3
March	W., then S.	6.3	16	12	3	7	3.14	3
April	W., then N.W.	6.2	17	9	4	8	4.70	4
May	S.E., then S.	5.4	12	17	2	4	2.83	3
June	S.E. and W.	4.4	10	16	4	11	6.19	16
July	S.W., then W.	6.1	19	11	1	8	1.77	6
August	S.E., then E.	4.9	10	19	2	9	8.97	14
September	S.E., then S.	7.5	22	7	1	4	0.49	0
October	W., then S.E.	6.2	20	10	1	5	1.51	2
November	W.	3.8	10	9	11	9	1.99	0
December	W., then N.W.	4.5	11	13	7	5	3.90	1
Whole year	W., then N.W.	5.5	173	146	46	83	42.84	53

REMARKS.

This table is the result of 5,000 to 6,000 observations, made in St. Louis, at the corner of Fifth and Elm Streets. Both are wide streets. The instruments are placed 106 feet above low-water

mark, the thermometer (one of Green's Smithsonian instruments) at a northern exposure, 20 feet above the street, 6 inches from the wall of the house. The times of observation are sunrise, 9 A. M., noon, 3 P. M., and 10 P. M.

The first column gives the mean atmospherical pressure, or mean elevation of the barometer of every month, reduced (for the sake of uniformity) to the temperature of the freezing point. It will be observed that the barometer is above the mean elevation of the whole year, from January to March, in September and December; in the other months it stands below the mean; it is highest in February, and lowest in July. This corresponds very well with the mean observations of twelve years, which show the barometer above the mean from January to March, below the mean from April to August (lowest in June), and again above the mean from September to December. No tabular statement has been given of the highest and lowest barometrical observations and of the range. I will here only state that the lowest occurred on April 4, 28.850, and the highest on January 31, 30.305. The range 1.455, near one inch and one half, is more than the usual range in St. Louis during one year, though the greatest range in 12 years amounts to one and three-fourths of one inch.

Examining a table of barometrical extremes, it is further seen that they are greatest from January to March, and in November and December, but the barometer is a great deal more stationary in the summer months, and especially from June to August; we then do not have those violent atmospherical commotions which are not unfrequent even in those months, on the eastern coast and in the greater part of Europe. The mean range of the barometer from November to March is over one inch, and from April to October under one inch; from June to August nearly half an inch.

The second to the seventh column relate to observations of the temperature and its changes. The second column gives the mean temperatures of every month. It will be seen that December was by far the coldest month of the year, and, as usual, July the warmest. January, February and March were warmer than usual, April much cooler, May and September warmer, June, July and August equalled the average temperature of those months, so did October and November, and December was colder. The mean temperature of the year very slightly exceeded the mean of 16 years. The years 1835, 1838 and 1843 were considerably colder, and 1833, 1842, 1844, 1845 and 1846 much warmer; the others were average years.

The third column gives the minimum temperature of every month. The fourth the maximums, and the fifth the difference between them, or the range. It will be seen that neither the greatest minima nor the greatest maxima have been reached in this year, and the range was not quite one hundred degrees; most in January, May and December, and least in April and (as usual) in June, July and August. The lowest temperatures observed in St. Louis in 20 years were—25°.0 in February, 1835; 18° in January, 1834 (both observed in the country some miles from the city); 12°.0 in January, 1852; 11°.0 in January, 1841; 8°.5 in February, 1836; 5°.5 in January, 1840; 5°.0 in February, 1838. In December, the temperature had never been as low as in this year; in December, 1845, when the river was frozen over from the 6th to the end of the month, it reached only 1°.0.

The highest temperatures observed in St. Louis were in 1833, 1834, 1838, 1841 and 1850, when the thermometer rose to over one hundred degrees. It did not rise over 95° in 1840, 1842 (from June to August, but in that year it rose to 98°.0 in September!), 1847, 1848 and 1849. In all the other years, from 1833 till 1851, the highest temperature rose from 97°.0 to 99°.5.

The range, or the difference between the maximum and minimum temperature of the year is in this year 99°.5; in other years (1832, 1833, 1835, 1836, 1838, 1841), it was from 6 to 26 degrees more, but frequently it is less; so 1837 and 1847, when it amounted only to 91 and 94 degrees. In this respect, also, the year 1851 proves to be an average year.

The 6th column is not usually found in meteorological tables, but I considered it important, especially in a medical point of view, as it is not so much the great range of the temperature which affects the animal system, as rather the suddenness of the changes. This column then gives the greatest change in every month which occurred in 24 hours. The letter F. indicates that it was a fall of temperature, and R. that it was a rise, which changes affect the system very differently. It will be observed that the greatest changes were always falls of temperature which took place from the noon or afternoon of one day, till the morning of the next; the rises occurred always from the morning to the afternoon of the same day. The greatest changes did not reach over 40°.5 in the winter months, and 25°.5 in the summer months. Is our climate really as changeable as often stated? The year 1851 appears to prove the contrary. In other years, however, some much severer

changes have occurred, and the last took place from the 16th to the 17th of March of this year, 1852, when the temperature fell 51 degrees in 17 hours. Greater changes even than that have taken place: in January, 1847, 56°, in March, 1839, 54°, and in March, 1833, 52°. On an average, the greatest and most sudden changes occurred in March, next in April, then in January, February and October; the least in July, then in August, June, September, May and November. The greatest change that I ever observed in July was only 32°, in 1846.

The last column in this table gives the dates on which these changes occurred, *e. g.* in January the temperature fell 40 degrees from the 28th to the 29th, etc.

It is proper to state here that these thermometrical observations have all been made in the heart of the city, though, as stated, in a fairly exposed situation. Comparative observations have proved that, in the country, the temperatures are very different. To be sure, in cloudy, or rainy, or in stormy weather, the temperatures are pretty much equal over town and country; but in clear still days, it is at sunrise generally very much cooler in the country, and especially in valleys, where moisture, evaporation and radiation are considerable; early in the afternoon, between 2 and 3 o'clock, it is on such days very often warmer in the country. Well compared and carefully observed thermometers have given me a difference at sunrise, sometimes of as much as 10 or 12 degrees, and in the afternoon occasionally 2 to 5 degrees, so that the daily range of the thermometer in the country is sometimes larger than in the city, by 12 to 15 degrees! Rarely the sunrise temperature is lower in the city than in the country, by 1 or 2 degrees.

The first column of the second table refers to the interesting phenomenon of the winds. It will be seen that west winds have been prevailing from January to April, and from October to December; southeast and southwest winds are predominant from May to September. If we compare the eight principal winds, we find in the six months, from November to April, the winds prevailing in the following order and proportion:—

W. 54, S. E. 30, N. W. 26, S. 23, S. W. 16, N. E. 13, N. 10, E. 9.

In the six months from May to October, the winds follow so:—

S. E. 45, W. 28, S. 27, S. W. 26, E. 20, N. W. 16, N. E. 14, N. 8.

West and southeast winds are therefore the prevailing winds the whole year round, and west more than southeast; the former more in the winter and spring, the latter in the summer and fall.

If we compare only the four cardinal directions, west, north, east, and south winds (when the southwest wind, for example, counts with the southerly and westerly winds), we obtain the following approximate proportions for the whole year:—

Westerly winds 10, southerly winds 10, easterly winds 8, northerly winds 5.

And for the six winter months:—

Westerly winds 6, southerly winds 4, easterly winds 3, northerly winds 3.

For the six summer months:—

Southerly winds 6, easterly winds 5, westerly winds 4, northerly winds 2.

Almost all the storms observed came from the west; the severer and longer continued ones occurred only in the winter months. In summer, some storms and squalls also took place from southwest and southeast.

The second column records the mean clearness of the sky according to the method adopted by Prof. Espy. A completely overclouded sky is designated by 0, a perfect clear one by 10, and the intermediate numbers express the greater or lesser clearness. The mean of 5 daily observations during each month is here given. It appears from this table that September, March, April, October, July, and January were the clearest months, and that in November, June, December, February, August, and May, the sky was most cloudy.

Similar results are obtained by the three following columns. The third gives the number of fair days, all together 173; most in September, October, July, April, and March; least in November, August, and June. The fourth column shows that variable days (where the sun shone part of the day only, whether with or without rains) were noted mostly in August, May, and June; the whole number amounted to 146. The fifth column gives the days when the sun did not appear at all, which numbered only 46 in the whole year, nearly one-half of them in February and November.

These three columns show that among the 365 days of the year, only the seventh or eighth day is entirely without sunshine, nearly one-half are clear or fair days, and the balance variable. The average number of fair days in 16 years was 132, the maximum 170 (in 1838), and the minimum 113 (1836). The year 1851, therefore, had more fair weather than is usual, even with our fair western climate.

The following column gives the number of days on which it rained or snowed, 83 in all, most in June (as usual), February, August, and November. The average number of raining days in 16 years was 89, varying from 115 (1836) and 106 (1844), to 81 (1847) and 78 (1838); June, May, and April always were those in which most rainy days occurred.

The quantity of rain and snow which fell during the year, is exhibited in the seventh column. It amounts to nearly 43 inches, of which the most fell in August, February, and June. The average quantity of the whole year, for 12 years, was 42 inches; as much as 65 inches fell in 1848, 53 in 1847, 32 only in 1842, 34 in 1843.

Most rain, on an average, falls in June, and also in May; mostly with thunderstorms in heavy showers; the driest months are generally February, January, and September. The quantity of rain that fell in the year 1851 was very unequally distributed over the continent of North America, or at least the Mississippi valley; while toward the north and west of us rains were abundant and even destructive; toward the south and east of us for the season, almost a complete drought prevailed, considerably injuring the crops. We were here just about on a line where the usual quantity of rain fell, and consequently our crops were superior to those south as well as north.

Only thirteen times in this year one inch of rain or more fell in one day, and only three times the rain gauge gave more than two inches: May 17, 2.48; August 3, 2.35; and December 29, 2.35 inches. In other years the quantity of rain in 24 hours is sometimes much larger. In the last 14 years, over 6 inches fell once in 1848, between 5 and 6 inches again twice in 1848; between 4 and 5 inches once in 1841, in 1847, and in 1850; and between 3 and 4 inches eight times. These very heavy rains are mostly accompanied by thunderstorms, and occur generally in May and June, but also in August, November, and December.

The eighth column states the electricity of the air as manifested by the number of thunderstorms in each month; the total number is 53, more than half of which occurred in June and August. The average number in 16 years was 49; ranging between 63 in 1834 and 1835, 59 in 1845, 35 in 1839, and 33 in 1840. The greatest number always occur in June, next in May, then in July, April, August, and least in December and January.

The different columns exhibiting the fairness or clearness of

weather, and the number of thunderstorms are added, because it is believed that these different meteorological phenomena have a very important bearing on human health, perhaps more than barometrical changes, and as much as the variations of the temperature.

From the St. Louis Medical and Surgical Journal, 1854.

Meteorology and Mortality of St. Louis in 1852 *and* 1853. By George Engelman, M. D.

In the tenth volume of this journal, p. 297 (July, 1852), I have published the result of my meteorological observations for 1851, intending to continue the same from year to year, and to connect them with a review of the sanitary condition of our city. Last year circumstances prevented this, but in vol. xi. p. 226 (May, 1853), I have given a synopsis of the meteorological conditions of our summer and fall months, likely to influence the general health, and of the comparative sickliness and mortality of those months during a series of years. I am now enabled to continue the meteorological tables commenced two years ago, and shall give at once those for 1852 and for 1853. I shall premise that the observations are made at the corner of Elm and Fifth Streets, both wide streets, running east and west and north and south, five squares east of the Mississippi River, the barometer elevated 105 feet above low-water mark, and the thermometer sufficiently removed from the wall of the house, and fully exposed to the open air in the shade, 20 feet above the street.

1852.	Barometer.				Thermometer.					
	Mean.	Highest.	Lowest.	Range.	Mean.	Highest.	Lowest.	Range.	Greatest change in 24 hrs.	
									Degrees.	Date.
January	29.557	30.265	28.891	1.374	26.9	65.0	—12.0	77.0	*r.* 25.0	13th
February	29.480	29.915	28.681	1.234	37.6	66.5	14.0	52.5	*f.* 35.5	24th—25th
March	29.368	29.983	28.776	1.207	46.9	82.5	19.0	63.5	*f.* 51.0	16th—17th
April	29.248	29.598	28.839	0.759	52.1	81.0	29.0	52.5	*r.* 30.5	13th
May	29.413	29.744	29.111	0.633	66.9	91.0	42.0	49.0	*r.* 31.0	1st
June	29.453	29.775	29.187	0.588	71.2	94.0	47.0	47.0	*r.* 27.0	12th
July	29.465	29.636	29.198	0.438	78.0	95.0	57.0	38.0	*r.* 23.5	19th
August	29.464	29.664	29.259	0.405	73.5	90.5	55.5	35.0	*r.* 25.5	13th
September	29.493	29.657	29.201	0.456	67.2	91.5	42.0	49.5	*r.* 28.5	27th
October	29.468	29.750	29.106	0.644	60.8	88.5	42.0	46.5	*f.* 28.0	11th—12th
November	29.444	29.877	28.892	0.985	38.5	61.5	20.5	41.0	*f.* 27.5	11th—12th
December	29.431	29.866	28.837	1.029	34.5	60.0	15.0	45.0	*f.* 44.0	16th—17th
Whole year	29.440	30.265	28.681	1.584	54.5	95.0	—12.0	107.0	*f.* 51.0	March 16—17

1852.	PREVAILING WINDS.	Mean clearness of sky.	NUMBER OF DAYS				Quantity of rain or snow in inches.	Number of thunderstorms.
			Fair.	Variable.	No sunshine.	Rain or snow.		
January	W.	4.7	10	14	7	9	0.99	0
February	W.	4.8	9	13	7	5	2.12	1
March	W., then S.E.	4.8	11	16	4	9	7.66	10
April	W., then N.W. and E.	4.9	12	14	4	9	2.28	3
May	W. and S.E.	3.3	10	20	1	11	5.19	9
June	S.E., then S.W and W.	6.6	12	17	1	10	10.25	10
July	E. and N.W., then S.E.	7.0	15	16	...	6	3.36	5
August	S.E., then W.	6.0	12	14	5	7	1.60	3
September	S.E. and W.	5.9	15	12	3	5	1.47	...
October	S.E., then W.	5.1	10	14	7	13	5.26	...
November	W., then E.	2.8	2	15	13	10	3.29	1
December	W., then S.E.	4.5	4	21	6	12	3.48	2
Whole year	W., then S.E.	5.0	122	186	58	106	46.95	44

1853.	BAROMETER.				THERMOMETER.					
	Mean.	Highest.	Lowest.	Range.	Mean.	Highest.	Lowest.	Range.	GREATEST CHANGE IN 24 HRS.	
									Degrees.	Date.
January	29.606	30.024	28.854	1.170	34.1	64.5	9.0	55.5	*f.* 35.5	2d—3d
February	29.497	30.017	28.820	1.197	32.7	69.0	4.0	65.0	*f.* 31.5	1st—2d
March	29.476	29.961	28.951	1.010	42.0	81.0	21.0	60.0	*f.* 41.0	7th—8th
April	29.413	29.776	28.960	0.816	56.0	81.5	37.0	44.5	*f.* 39.0	13th—14th
May	29.440	29.897	29.025	0.872	63.6	91.0	41.0	50.0	*f.* 40.0	19th—20th
June	29.467	29.713	29.195	0.518	78.0	97.0	54.0	43.0	*r.* 29.5	18th
July	29.482	29.620	29.218	0.402	75.2	95.0	56.0	39.0	*r.* 25.0	8th
August	29.433	29.735	29.258	0.477	75.9	95.0	53.0	42.0	*r.* 29.0	29th
September	29.474	29.704	29.140	0.564	69.5	90.0	44.0	48.0	*r.* 27.0	24th
October	29.538	29.860	29.072	0.788	52.7	84.0	26.0	58.0	*r.* 33.5	18th
November	29.602	29.972	29.213	0.759	48.1	72.0	30.0	42.0	*f.* 26.0	1st—2d
December	29.506	29.875	28.824	1.051	33.5	57.0	12.0	45.0	*f.* 29.0	1st—2d
Whole year	29.494	30.024	28.820	1.204	55.1	97.0	4.0	93.0	*f.* 41.0	March 7—8

1853.	PREVAILING WINDS.	Mean clearness of sky.	NUMBER OF DAYS				Quantity of rain or snow in inches.	Number of thunderstorms.
			Fair.	Variable.	No sunshine.	Rain or snow.		
January	W., then N.W. and S.E.	5.2	12	12	7	5	0.52	...
February	W. and N.W.	5.9	14	9	5	6	1.67	...
March	W., then N.W.	5.5	12	14	5	5	0.79	...
April	W., then N.W.	5.1	9	18	3	9	3.24	10
May	W., then S.	5.9	13	16	2	7	3.64	4
June	S.E., then S. and S.W.	7.7	16	14	...	5	3.23	7
July	N.E., S.E., E.	6.3	14	17	...	7	4.10	5
August	E., then S.E. and W.	6.7	16	14	1	8	5.48	10
September	S.E., then S.	6.8	16	12	2	7	4.67	3
October	E., then W.	7.0	17	11	3	3	0.96	1
November	S.E.	3.6	5	20	5	7	1.51	1
December	W., then S.E.	5.2	9	18	4	5	1.08	...
Whole year	W., then S.E.	5.9	153	175	37	74	30.89	41

The first four columns of these tables give the mean atmospherical pressure, the highest and lowest, and the range of every month. The observations are made in English inches and decimals, and have been corrected for temperature (reduced to the temperature of the freezing point), according to the tables published by the Smithsonian Institution. It will be found that the barometrical phenomena in 1852 were irregular, and differing much from the mean results of a number of years before. Usually (and we find it so again in 1853) the first and the last months of the year are above the annual mean, and the atmospheric pressure is least in summer, generally in June, or sometimes in July. But 1852, only March, April, and May, and again December, were below the annual mean, April being by far the lowest month, and indeed unusually low. November was about equal to the mean, and all the other months above it. The annual mean is (also very low) one of the lowest observed by me in seventeen years; only equalled by that of 1846.

Those who wish to compare these data with my meteorological tables, published in the late Prof. Drake's work on the Mississippi Valley, pages 519, 531, etc., should understand that a different location of the barometer and a difference in the scale, and also a difference in the correction for temperature, alter the result considerably, and 0.100 ought to be deducted from the barometrical means as published in that work, in order to bring them to the same comparative standard with my present barometer in its present location. The mean atmospheric pressure of this place, 105 feet above low-water mark, is, therefore, 29.477 inches.

In the year 1853, January, and again October, November, and December, had a mean barometrical elevation above the annual mean; February was about equal to the mean; and the months from March to September below it. The lowest month is again in this, as in the preceding year, the month of April. The mean for the year is among the highest that have occurred for seventeen years, about equal to that of 1838, 1842, and 1845.

The barometrical variations were very great in 1852; the range in January being more than one and one-third of an inch, and in the whole year over one and one-half inch. In 1853, February showed the widest range, and the range of the whole year did not amount to one and one-fourth inch. It results from my tables, that ranges over one inch only occur in the winter months, December to March. In July and August, the range of the barometer does not amount to half an inch.

It is interesting to observe the regularity with which in our climate the barometer performs its daily variations, and how little those regular changes are influenced by accidental atmospherical disturbances. The seasons, it will be seen, exert only a slight influence on these variations. The barometrical observations for 1853, give the following results:—

The barometer rises from sunrise till 9 o'clock A. M., in spring and summer on an average 0.015 inch, in fall and winter 0.019; it then falls from 9 to 12 o'clock in spring and summer 0.025, in fall and winter 0.034 inch; and from 12 to 3 o'clock P. M., in the former season 0.036, in the latter 0.035 inch. From 3 till 10 P. M., it rises in spring and summer 0.025, in fall and winter 0.027 inch; and till sunrise it rises further in summer 0.027, in winter 0.019 inch. The difference between the highest (at 9 A. M.) and the lowest (at 3 P. M.), is on an average for the whole year 0.065 inch.

The mean temperatures, also, are calculated according to a different system from those published in Prof. Drake's work. These were the results of the observations made at sunrise and at 3 o'clock P. M. The present tables are based on four daily observations, made at sunrise, 9 A. M., and 3 and 10 o'clock P. M., and are believed to give more correct data. The results are invariably a little lower than those obtained by two daily observations; in the fall and winter months the difference is above one degree, in spring and summer about half a degree, and for the whole year the difference is between three-fourths and one degree.

The tables show that the mean temperature of 1852 was lower than that of 1853; January of the former year was, by far, the coldest month of both years, and, in fact, one of the coldest months in twenty-one years. I find in my records only the following nine months marked as having been colder: January, 1834; February, 1835; February and December, 1838; January, 1840; February and March, 1843; December, 1845, and January, 1847. The lowest temperature occurred on Monday, January 19, 12° below zero, which has been the lowest point reached since February 8, 1835, when the thermometer indicated 25° below zero. January 17, 1841, it was 11° below zero. In the year 1853, the temperature never came down to zero.

The highest temperature reached in 1852, was 95°, July 28 and 29; and July was, as usual, the warmest month of that year. In 1853, June was by far the warmest month, and the warmest June I

ever observed. Next to June came August, with an average mean temperature; but July was unusually cool, cooler than both the other months. I have never, in twenty-one years, seen this proverbially hot month as cool as in the last year, except in the years 1835, 1848, and 1849.

The highest temperature in 1853 (97°), occurred on June 20 and 21. My thermometer showed 100° or more, only in July, 1833, 1834, 1838, and 1841, and in August, 1834. From June 10 to 15, and again from the 18th to the 22d, the temperature was extremely warm, every day over 90°, and for three days in succession, between 75° at sunrise and 97° in the afternoon, with light southeasterly, southerly, and southwesterly winds; but the air was clear and dry, and no very deleterious effects on the general health were noticed; only thirteen deaths more occurred in those weeks than in the previous one. In August, on the contrary, the famous hot days, from the 10th to the 14th, with a temperature rather lower than in June (between 74° to 79° at sunrise, and 91° to 95°, in the afternoon), had a very marked effect on the health throughout a great part of the United States; the air was generally hazy, or light clouds floating in the sky; wind south, southeast, and southwest; the atmosphere saturated with moisture. The number of deaths in that week was 131; 47 more than in the preceding, and 24 more than in the following week.

The range between the maximum and minimum temperatures in 1852, was 7° over 100; and in 1853, as much below 100. In other years it has been oftener below than above 100°.

In the tables published in 1852, I have devoted two columns to the greatest changes of temperature occurring within 24 hours. I considered these observations as being of some importance in a medical point of view. I have continued these data in the tables for 1852 and 1853. The numbers in the first column give the degree of change; the letters *f* and *r* indicate whether the change consisted in a fall or a rise of the temperature. It will again be observed, that in the winter months the falls, and in the summer months the rises of temperature are the greatest, and the changes in winter are most always greater than in summer. In 1852, one of the great changes occurred, which are occasionally experienced here. From March 16 to 17, the temperature fell 51° in 17 hours. Greater changes have occurred in January, 1847 (56°), and March, 1839 (54°). In the present year, the thermometer sunk from Janu-

ary 5, at 9 o'clock A. M., to January 6 at sunrise, from 57.5° to 6°—51.5°. In 1853, the greatest change, 41°, occurred in March.

I repeat here, that the thermometrical observations made in the heart of the city, though in as favorable an exposure as possibly can be found there, cannot give a perfectly correct idea of the temperature of the whole surrounding country. In clear still nights, the radiation in the country is so much greater, that the temperature is often found to be as much as ten degrees below that of the city; especially where evaporation, which of course is greater in lower damp localities, and less in higher and drier ones, adds its refrigerating effects. In cloudy weather, when radiation is inconsiderable, and in stormy days, when the violent disturbances of the atmosphere equalize the temperature of different places, the difference is not great, or disappears entirely. On January 19, 1852, at sunrise, when my thermometer indicated 12° below zero, a well compared thermometer in the country ten miles southwest of the city, in a very exposed situation, showed 14°.

My thermometer fell to the freezing point, or below it, for the last time in spring 1852, on April 2, and in 1853, on March 28. In the fall, it reached that point for the first time in the former year on November 9, and in the latter year on October 24. The average of twenty years gives as the date for the last frost in the spring, April 6, and for the first frost in the fall, October 26. The latest frost observed in twenty years, occurred April 27, 1834, and May 2, 1851; the earliest, October 4, 1836, and October 15, 1845. The number of days between the latest spring frosts and earliest fall frosts varies between 173 (1836 and 1851), and 242 (1842), and is on an average 203. It must not be forgotten that the temperature of 32° indicates what is called a black frost, but in the country, especially in low and exposed places, the vegetation often suffers from a temperature which is several degrees above the freezing point.

The column of winds in both years, again shows the prevalence of western and next to them southeastern winds. Westerly winds prevailed in both years from January to May, and again in December, in 1852; also in November. The months from June to October (and November in 1853), show a preponderance of southeasterly and easterly winds; in July, 1853, an unusually cool month, northeast winds prevailed.

Nearly all the storms came from the west and northwest; the severer and continued ones occurred only in winter. Southern

storms occasionally take place in summer. The fact may not have been generally noticed that the great storms accompanied with violent changes of the barometer and thermometer regularly travel from west to east; it takes them about twenty-four hours to come from the Rocky Mountains to the Mississippi, and twenty-four hours more to reach from here to the Atlantic coast. Here, and still more so west of us, they are often accompanied with dry and even clear weather, while east of us, and especially towards the Atlantic slope, they often take the form of heavy rain or snow-storms.

The mean clearness of sky is calculated after the method adopted by Prof. Espy and the Smithsonian Institution; a completely overclouded sky is indicated by 0, a perfectly clear one by 10; the intermediate numbers, 1 to 9, express lesser or greater clearness. The means recorded in the table are those of five daily observations. The tables show for 1852, less clearness than in 1851, and for 1853 greater clearness. In 1852, the clearest weather occurred from June to September; in 1853, from May to October; the gloomiest in 1852 in May and November; in 1853, also in November. September is on the average the brightest, and November always the darkest month in the year.

The following column records the clear or almost clear days, which were less than an average in number in 1852, and more so in 1853; in November, 1852, only two clear days are marked down; in October, 1853, as many as 17. Variable days I call those where the sun shines part of the day only, and is partly obscured by clouds or haze; it may rain or snow on such days or not. The number of these variable days is generally greatest in May and June, and again in November and December. Dark days, when the sky was entirely overclouded, and the sun did not appear at all, dry or wet, occurred in 1852 to the number of 58, an unusually large amount for our climate. In 1853, only 37 such days were noted—a very small number. Such days are rare in summer and fall, but more common in winter, especially in January, February and November.

It rained or snowed in 1852 on 106, in 1853 only on 74 days; the average of a number of years in 89 days. The smallest number observed by me in any one year before the last was 78 days in 1838; the largest number 115 in 1836.

The quantity of rains and snow in 1852 was more than the average, which is 42 inches. In 1853, less rain has fallen than in the

fifteen previous years. In the year 1842, thirty-two inches, and in the following year thirty-four inches of rain had been the lowest before the last year. The largest quantity ever observed by me was sixty-five inches (more than double the quantity of 1853), in the year 1848. I may remark, that after the dry and warm year of 1842, a dry and cool year followed; and the year after that, 1844, was wet and hot, and remarkable for the great flood, and the very sickly summer and fall. That may occur again, and this year, 1854, may possibly correspond with 1843, and 1855 with 1844. Be that as it may, we find in the records of the past no just reason to expect the present to be a very wet year, though the last was very dry.

On an average, less rain (or snow) falls in January than in any other month, not quite two inches; and in both years, under consideration, not one inch fell. The quantity increases with every month till June; the average of which month is six inches. In 1852 ten inches fell in June, but in 1853 only three inches. From July to December, the average quantity of rain varies between two inches and a half in September, and four inches in July and August; in October and November it is three inches, and in December somewhat less.

The year 1852 was remarkable for the unusually large quantity of rain that fell in March, and again in October. The year 1853 had more rain from July to September, than from April to June, much more than the average of those months, a very unusual occurrence. To this fact, probably, viz: the dryness of spring and for summer, and the rains in the after part of summer, in a great part, we no doubt have to ascribe the unusual fertility of the last season, and the perfection to which fruit attained. In other parts of the country it was too dry, in a few also very wet, and the crops suffered in consequence.

In the year 1852, once (June 23) more than four inches of rain fell in twenty-four hours; once (March 12) more than three inches; once more than two inches, and ten times over one inch. In 1853, three times more than one inch, and four times more than two inches of rain were observed in twenty-four hours.

It may be stated that the quantity of snow (which in the tables is included in the quantity of rain) is very inconsiderable. Snow falls in our climate generally from November to March, four months, sometimes not before December, and rarely in April (in the last sixteen years, only in 1843, 1850, and 1851), and in none of

the winter months does not also fall rain, generally more than snow. The average quantity of snow from December to March is about half an inch in every month, in November one-fourth of an inch, and in April one-tenth of an inch only. The largest quantity of snow observed in one single month hardly exceeds one inch and a half (December, 1839, and December, 1846). The quantity of snow in 1852 was 1.06, and in 1853 was 1.86 inch. The last snow in 1852 fell February 28, and in 1853 March 6; the first snow in fall 1852, November 16, and in 1853, December 17.

The number of thunderstorms passing over this place was 41 in 1852, and 44 in 1853, in both years less than the average, which I find to be 49. In 1852, the largest number occurred in March, May, and June; both the latter months are usually those in which thunderstorms prevail, but the average number in March is only between two and three. In 1853, April and August had each ten storms, May and June together only eleven. The average number for April is between five and six, and for May and June together between eighteen and nineteen.

[NOTE.—These tables are taken from the Weekly Tables of Interments, published by the *City Register*. They differ, to some extent, from our own computation.—R.]

Table showing the Mortality of St. Louis, in 1852, *among the different Classes of the Population, and in the Aggregate.*

1852.	WHITES.				COLORED.	Total.	Per mille.
	Males.	Females.	Children 5 y'rs old, or under.	Total.			
January	117	80	79	197	8	205	2.1
February	138	90	99	228	7	235	2.3
March	144	84	118	228	5	233	2.3
April	145	128	135	273	7	280	2.8
May	180	114	141	294	7	301	3.0
June	353	252	250	605	4	609	6.1
July	504	355	420	859	13	872	8.7
August	352	244	278	596	10	606	6.1
September	275	149	187	424	11	435	4.3
October	242	139	160	381	11	392	3.9
November	199	147	144	346	4	350	3.5
December	163	130	120	293	7	300	3.0
Total	2,812	1,912	2,131	4,724	94	4,818	48.2

Table showing the Mortality of St. Louis, in 1853, *among the different Classes of the Population, and in the Aggregate.*

1853.	WHITES.				COLORED.	Total.	Per mille.
	Males.	Females.	Children 5 y'rs old, or under.	Total.			
January	179	126	155	305	8	313	2.8
February	157	120	155	277	11	288	2.6
March	153	115	140	268	14	282	2.5
April	149	135	146	284	14	298	2.7
May	132	114	148	246	9	255	2.3
June	175	137	196	312	14	326	3.0
July	236	135	224	371	9	380	3.4
August	265	157	238	422	4	426	3.9
September	284	134	170	418	7	425	3.9
October	216	130	177	346	9	355	3.9
November	163	103	127	266	6	272	2.5
December	142	91	105	233	6	239	2.2
Total	2,251	1,497	1,981	3,748	111	3,859	35.1

In examining these tables, it must be borne in mind that it is not only the deaths that take place among our resident population which are recorded there, but that the number is largely increased by the deaths occurring among the floating population, not included in the census tables, and the numerous travellers and immigrants, who not rarely arrive here in the last stage of sickness, only to people our burying places. I assume the population of the city and suburbs, in 1852, to have been 100,000, and in 1853, 110,000, which numbers, however, are hardly large enough to include our floating population. The last column in the tables is based on this calculation. It results from this column, that in 1852, which was the last of our four cholera years, 48 died among 1,000, and in 1853, only 35; that from June to September, 1852, the number of deaths ranged from 4 to nearly 9 in 1,000 in one month, but that in 1853, the number never reached 4 in a thousand.

In both years the number of deaths of white females was 40, and of white males 60 per cent., which is owing partly to the greater exposure and consequent sickness men are subjected to, but partly, also, to the absolutely much larger number of males in our community.

In 1852, the number of deaths of white children of five years and under, was, in proportion, smaller than in 1853; in the former year it was 45, in the latter 53 per cent. The cause is to be found in the fact, that cholera attacked and destroyed fewer children, in

proportion, than adults; we find the mortality among children in the summer months, when cholera prevailed, not to have been much more than one-third of the whole number of deaths. It is further to be found in the lower degree of heat which prevailed in the summer of 1852, and in the absence of fatal infantile epidemics. In 1853, on the contrary, scarlatina of a very dangerous character, was prevalent for the four or six first months, almost exclusively among children; the proportion of infantile mortality, from January to April, was 52 per cent. In the months of June, and principally August, the heat of the weather found its easiest victims among young children, and we see the proportion accordingly much greater; in June, July, and August together, almost 60 per cent.

In the statistical investigation, published in this journal in May last, p. 227, etc., I have already attempted to show the influence of atmospherical agents on the health of the summer and fall of 1852. It now remains to bring those tables down to the end of last year (1853), and by them either to confirm or to modify the results arrived at.

The percentage of sickness (see May number, p. 228) I find for July 8, for August 12, and for September 13. The percentage of mortality was in July 10, in August 11, and in September 11. The quantity of rain in May, June, and July, was nearly 11 inches, and in August and September a little over 10 inches. The mean temperature of June (78°) was higher than I ever observed it in that month; that of July (75°) was lower than the average; that of August (76°) and September (69°) is about the average temperature for both these months. These meteorological conditions would seem to indicate a sickly summer with a more healthy fall, but the low mean temperature of July evidently prevented much sickness in that month, which might have been expected from the want of humidity in that and the two preceding months. In August we find a little more than the average sickliness, owing, no doubt, to the excessive heat of the second week of that month (see above), but less than the average mortality. In September, sickliness as well as mortality were below the average.

The results, therefore, obtained from a discussion of the statistical tables, above mentioned, and which have been given (vol. xi. pp. 230 and 231), are mainly confirmed by the experience of last year; I would make only two slight alterations: § 4, page 230, ought to read, "Less than 12 inches of rain in May, June, and

July, is always accompanied by great sickliness and mortality in July, 'unless this month should have an unusually low mean temperature.'"

And § 12, page 231, should be modified: "Higher or lower mean temperatures of August and September do not appear to influence the amount of sickness in the fall season 'to any great extent.'"

The Meteorological Causes of Climatic Diseases in St. Louis. By GEORGE ENGELMAN, M. D. [For Dr. Reyburn's report on Epidemics.]

The observation of our diseases in a medical practice of nineteen years in this city, and meteorological observations regularly made during all this time, have enabled me to bring together a series of facts in such a way as to lead to some unavoidable deductions, which I think will go a great length in giving a clearer insight into the casual connection of humidity and temperature, and sickliness and mortality in the summer and fall months.

These investigations have not been instituted to build up or favor any one theory, but as well as possible to get at the truth.

Our sickly season comprises the months of July, August, and September; June and October often come in for their share; but every practising physician will concede that, in the first named three months, the greatest amount of sickness and deaths occurs in our climate. To these three months, therefore, I shall confine myself.

The different data resulting from my observations and bearing on the subject before me, I have arranged in the following table:—

Statistical Table showing the Comparative Sickness and Mortality in St. Louis, in the months of July, August, and September, and the Influence of Heat and Moisture thereupon.

	PERCENTAGE OF SICKNESS.			PER MILLE OF MORTALITY.			QUANTITY OF RAIN.		MEAN TEMPERATURE.			
	July.	August.	September.	July.	August.	September.	May, June, and July.	August and September.	June.	July.	August.	September.
1836	9	12	*c*15	...	...	...	...	...	74.7	78.5	73.6	67.7
1837	7	11	*c*13	...	...	...	...	...	72.0	78.1	75.4	66.8
1838	9	10	*c*13	...	...	...	...	...	75.7	*b*81.6	80.4	68.6
1839	9	15	*c*19	...	...	...	*c*29.90	*c*5.34	70.3	76.3	74.3	64.4
1840	...	...	...	...	...	...	13.21	11.11	77.2	76.9	76.0	65.7
1841	*b*15	10	8	*b*6.7	5.5	3.7	*b*7.14	5.85	77.4	*b*80.9	77.1	68.0
1842	*b*12	7	11	2.4	*c*2.7	2.2	*b*10.10	*c*4.81	72.7	75.8	73.3	71.8
1843	9	11	*c*14	5.6	*c*6.1	4.3	*b*10.59	*c*3.51	73.8	79.1	76.8	73.2
1844	9	18	*c*23	5.6	*c*6.0	4.5	*c*26.24	*c*0.75	75.5	*b*81.6	77.4	67.9
1845	10	11	*c*14	*b*4.9	4.5	4.5	19.18	7.26	74.7	79.7	77.5	70.8
1846	*b*12	11	10	*b*5.7	4.8	4.5	*b*9.80	9.57	70.8	*b*81.4	78.6	74.0
1847	10	10	*c*16	*b*6.5	5.9	5.5	18.34	*c*4.16	72.0	78.6	74.7	69.1
1848	*b*11	9	9	*b*4.4	3.8	3.1	*c*30.54	10.86	72.5	73.7	74.9	64.4
1849*a*	*b*23	6	5	*b*31.4	5.5	4.1	18.57	10.96	75 3	75.1	73.8	68.5
1850*a*	*b*15	13	9	*b*12.8	7.6	3.5	13.77	5.84	76.8	*b*80.8	81.5	69.3
1851*a*	*b*17	11	9	*b*8.6	4.6	3.6	*b*19.79	9.46	72.9	78.0	75.6	72.5
1852*a*	*b*12	11	11	*b*6.8	6.6	4.0	18.80	*c*3.07	71.5	78.5	73.9	68.7
1853	8	12	*c*13	3.3	*c*4.0	3.8	*b*10.97	10.15	78.0	75.2	75.9	69.5
1854*a*	*b*15	9	7	*b*11.8	7.1	4.9	*b*10.43	*c*3.24	75.3	*b*83.0	80.8	75.0
Average of 18 years	12	11	12	*d*8.3	5.3	4.0	*g*16.15	6.62	*h*74.6	79.0	76.4	69.2
Average of 13 ordinary years	10	11	14	*e*5.0	4.8	4.0						
Average of 5 cholera years	16	10	8	*f*14.3	6.3	4.0						

(*a*) Cholera years.

(*b*) Indicates those years where the greatest sickness and the greatest mortality prevailed in July, and where small quantity of rain and high temperature in July seemed to favor the development of disease in that month.

(*c*) Designates those years when the greatest sickness prevailed in September, and the greatest mortality in August, and when a large quantity of rain in May, June, and July, and a small amount in August and September appeared, to furnish the most favorable condition for fall sickness.

(*d*) Average of 14 years.

(*e*) Average of 9 ordinary years, without cholera.

(*f*) Average of 5 cholera years.

(*g*) Average of 16 years.

(*h*) Average of 19 years.

This table is divided into four parts. The first part shows the percentage of sickness in July, in August, and in September of every year since 1836 (with the exception of 1840, when I was absent from here). By percentage of sickness, I understand the

percentage of the total amount booked by me in every year. This I confess is the weakest part of my argumentation, because the practice of one single physician may justly be said not to be a very safe indication of the greater or less sickness in a city; and the more so as surgical and obstetrical cases have not been separated from the purely medical practice. Nevertheless, I have reason to believe that, if the numbers given in this table do not give the exact mathematical truth, they come sufficiently near it to make them proper elements in this investigation.

The second part gives the mortality per mille for the whole city in the same months of July, August, and September, since the year 1841, the first year in which a proper registration was organized by the city government.

The third part gives the quantity of rain which fell here in the months from May to September of every year since 1839. The first column shows the amount of rain in the three months, May, June, and July; and the second column, that in August and September. Why I have arranged this table in that way I will show hereafter.

The fourth part gives the mean temperatures of June, July, August, and September, since 1836.

Let us now return to the first part. In examining these three columns, giving the percentage of sickness in July, August, and September, we discover the fact that either July or September [and never August] was the most sickly month; and that was the case not only for the three months named, but for the whole year; the greatest amount of sickness has always occurred in July or in September. The cholera has not varied that fact, for, in the cholera years, July has always been the most busy month with the physicians here.

On the above table, all the years in which July was the most sickly month, are indicated by *b*, and those when in September occurred most sickness, by *c*.

A careful examination of the records of our cemeteries proves that principally July, and next to it August, are the months in which the greatest mortality has prevailed in Illinois. I find only one exception—in the year 1851, one of our cholera years—where in June the mortality was greater than in any other month of the year. The years with the greatest mortality in July are designated by *b*, and those where it occurred in August, by *c*.

Comparing these three columns with the first three, we notice the

fact that generally the years wherein I observed most sickness in July, show also the greatest mortality in that month; and again, the years in which the greatest amount of sickness occurs in September, usually show the highest mortality in August (not in September), and sometimes even in July. All the five cholera years belong to the first class, and also the years 1841, 1846, and 1848; the year 1842 alone seems to be an exception, with more sickness in July, and greater mortality in August.* To the second class belong the years 1843, 1844, and 1853, with the greatest mortality in August; and 1845 and 1847, with greater mortality in July.

The two following columns exhibit the amount of rain that fell in summer and fall. The first column comprises the months of May, June, and July, together, and the second those of August and September. I have to explain here why I have thought it necessary to bring May and June in here. These months constitute our rainy season, when hot and sultry weather, a humid atmosphere, frequent thunderstorms, and heavy, though often short showers of rain, prevail. The rain of these months, I believe, and I think I can prove to you, lays the foundation to the fall sickness. In July the rains are generally much less, and therefore cannot have so much influence on the health. It will be noticed, that the quantity of rain in these months varies from only seven to more than thirty inches, and that the average is somewhat over sixteen inches, which is nearly two-fifths of the amount for the whole year.

Those years in which the quantity of rain amounted to ten inches or less, are indicated by figures with *b*, while those with twenty inches of rain or more are marked with *c*.

The second column of this part of the table gives the quantity of rain for August and September. August is sometimes a wet month, but September is generally very dry; the amount of rain for these two months varies between less than one and eleven inches. Those with less than five and one-half inches are marked thus *c*.

These two columns compared with the former, show that generally where there is little rain in the summer months, there is much sickness, and usually also mortality in July; but whenever there is much rain in these months (May to July), we find less sickness in July. The former was the case in 1841, 1842, 1846, and 1854; the year 1843, however, presents seemingly an exception; the second

* This exception may not in reality exist, as the register's mortuary reports, as preserved for this period, are extremely defective.

case occurred in 1839 and 1844, but 1848 is a remarkable exception.

And we find, further, that whenever the quantity of rain in these three months amounts to more than twenty inches, we may expect a sickly fall, great mortality in August, and still more though less fatal sickness in September. This we find to have been the case in the years 1839, 1844, 1845, and 1847, and even in the cholera year 1852, to some extent at least. But the deleterious influence of the heavy summer rains seems to be neutralized by unusually wet weather in the fall, say more than 10 inches of rain in August and September. Such was the case in 1840 (of which year, however, no records of sickness or mortality are preserved), in 1848, and 1849; the year 1853 seems to form an exception.

The four following columns give the mean temperatures of June, July, August, and September of the years in question. The highest temperatures in July—those over eighty degrees—have the Italic *b* annexed to the figures.

The discussion of these last columns gives rather negative results. A high temperature in July, to be sure, appears to be directly connected with a great amount of sickness in that month; it was so in 1841, 1846, 1850, and 1854 (which latter years, however, were also cholera years). But in 1838, and in 1844, when the mean temperature of July was, with one exception, higher than in any other year observed, there was much more sickness in September than in July. In the first of these years, 1838, no observations on the rain had been made, but in 1844 an immense amount of rain fell from May to July.

In regard to the temperature of the other months, we find August and September sometimes sickly and sometimes healthy, with both a high or a low mean temperature. So in 1838 and 1843, the fall was warm and sickly; in 1839, 1844, and 1847, it was cool and sickly. In 1846 and 1854, September was warmer than in any other year observed, and very healthy, while in 1848 it was comparatively cool and quite healthy.

At the foot of the table the means have been given—on the first line the means of all the observations, and below them the means of all the data, excluding the cholera years; and in the third line, the means of these five cholera years.

It results from this part of the table, that, on an average, as much sickness occurs in our city in July as in September, but the mortality in the former month is much greater; it is intermediate in

August. If we exclude the anomalous years, when the great epidemics prevailed, we find sickness decidedly more prevalent in September, but mortality greater even than in July. August remains intermediate, showing a little more sickliness, and a little less mortality than July.

I recapitulate the results of the foregoing investigations, leaving out the cholera years.

1. Either July or September are here the most sickly months in the year. On an average, more sickness occurs in September than in July.

2. Either in July or in August, the greatest mortality occurs. On an average, more deaths occur in July than in August, and in August more than in September.

3. The greatest mortality accompanies the greatest sickliness in July, while the years when the greatest sickliness prevails in September, generally show the greatest mortality in August, rarely in July.

4. Less than twelve inches of rain in May, June, and July are always accompanied by great sickliness and mortality in July, unless this month should have an unusually low mean temperature.

5. More than twenty inches of rain in May, June, and July generally precede great mortality in August, and a vast amount of sickness in September.

6. This is especially the case whenever the quantity of rain in August and September is below five inches.

7. But the rule 5 suffers an exception, whenever the quantity of rain in August and September amounts to more than nine or ten inches. Then the fall is comparatively healthy, even if the summer be wet.

8. Even with a smaller quantity of rain from May to July, there is much sickness in August and September, whenever the amount of rain in these last months is unusually small, say below three or four inches.

9. Less than ten inches of rain from May to July always indicates a healthy fall.

10. Great heat in July (over eighty degrees mean temperature), is generally accompanied by considerable sickliness and mortality in that month.

11. But when this great heat in July is accompanied by much rain (over twenty inches), in May, June, and July, the amount of sickness in July is in general not so great.

12. Higher or lower mean temperatures of August and September do not appear to influence the amount of sickness in the fall season to any great extent.

The main points of the foregoing twelve paragraphs may safely be assumed to be:—

A wet summer is a healthy summer.

A wet fall is a healthy fall.

A dry and hot summer is a sickly summer.

A dry fall, whether warm or cool, is a sickly fall.

A wet summer and dry fall combined, make the most sickly fall.

These, it may be said, are old observations, well known to the people, especially in the country and to country practitioners. I fully admit that! All my ambition here consists in substantiating these old maxims by precise statistical and meteorological observations.

I have been careful so far not to express an opinion as to causes, but have only given facts, which any one is at liberty to consider as mere *coincidences*. But if the same coincidences are observed for a length of time invariably, we are permitted, I should think, to presume that they stand in some essential or causal connection.

Without entering now further into that question, I shall only indicate a few, as it seems to me, unavoidable conclusions.

1. Moisture has more to do with our climatic fall sickness than heat.

2. But it is not the moisture itself, the precipitated humidity of the atmosphere, which produces sickness; on the contrary, the wet seasons are the more healthy ones.

3. It is rather the evaporation of this moisture in a dry season, after a wet one, which brings on sickness.

Whether this effect is produced by the simple physical process of the formation of water gas (evaporation), or by this gas holding in solution or carrying with it other volatile substances, would lead too far here to examine. I will only state that, to me, the latter is the more probable supposition, and that it appears to lead us back to the old miasmatic theory.

The question will have arisen, what influence atmospherical pressure may exercise on the character and prevalence of our summer and fall diseases? A careful analysis of my barometrical observations has given only negative results. During August and September, the atmospherical pressure, which from April to July

had been below the annual mean, again reaches that point, and exceeds it in the following fall and winter months. The barometrical changes are neither considerable nor rapid in August and September, though a little more so than in July, which month shows greater steadiness than any other month in the year; in August and September, these changes are much smaller than late in the fall, winter, or spring.

In order to show the influence of cholera on general mortality, we present the following table, exhibiting the monthly mortality of fourteen successive years in St. Louis, during five of which cholera prevailed. The computations are made out from the weekly mortuary returns preserved in the City Register's office.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total each year.	Population of mortuary limits.
1841 . .	26	25	21	36	51	69	200	164	110	111	67	80	960	30.000
1842 . .	51	74	57	31	32	64	82†	93	75	88	37	36	720	34.000
1843 . .	26	39	45	30	33	66	221	233	164	134	83	86	1160	38.000
1844 . .	92	98	80	90	72	112	233	258	193	147	95	109	1579	43.000
1845 . .	106	64	83	77	129	192	235	216	217	163	111	108	1701	48.000
1846 . .	110	117	146	131	121	180	309	257	244	196	124	120	2055	54.000
1847 . .	153	156	158	157	168	247	401	367	342	277	222	218	2866	62.000
1848 . .	202	189	194	184	199	287	305	276	217	226	189	235	2703	70.000
1849* . .	292	251	318	428	863	2423	2514	444	331	256	200	173	8495	80.000
1850* . .	247	157	197	233	348	542	1155	688	312	239	249	172	4539	90.000
1851* . .	146	167	194	193	211	1010	863	463	358	317	249	217	4388	100.000
1852* . .	187	283	244	288	302	616	751	724	436	395	353	302	4881	110.000
1853 . .	305	268	304	292	254	317	386	460	439	354	270	240	3889	117.000
1854* . .	225	226	254	380	458	988	1500	906	619	537	362	347	6802	127.000

* Cholera years.

† 49 killed by the explosion of steamboat Edna, at the mouth of the Missouri, excluded from this enumeration.

The daily reports of intermittents published in June, 1849, give a monthly total of 2,347

Those of July give a monthly total of 2,723

Diagram shewing the Average Mortality at St. Louis Mo. for the years 1841-1854. Engelman.

December	January	February	March	April	May	June	July	August	September	October	November	December

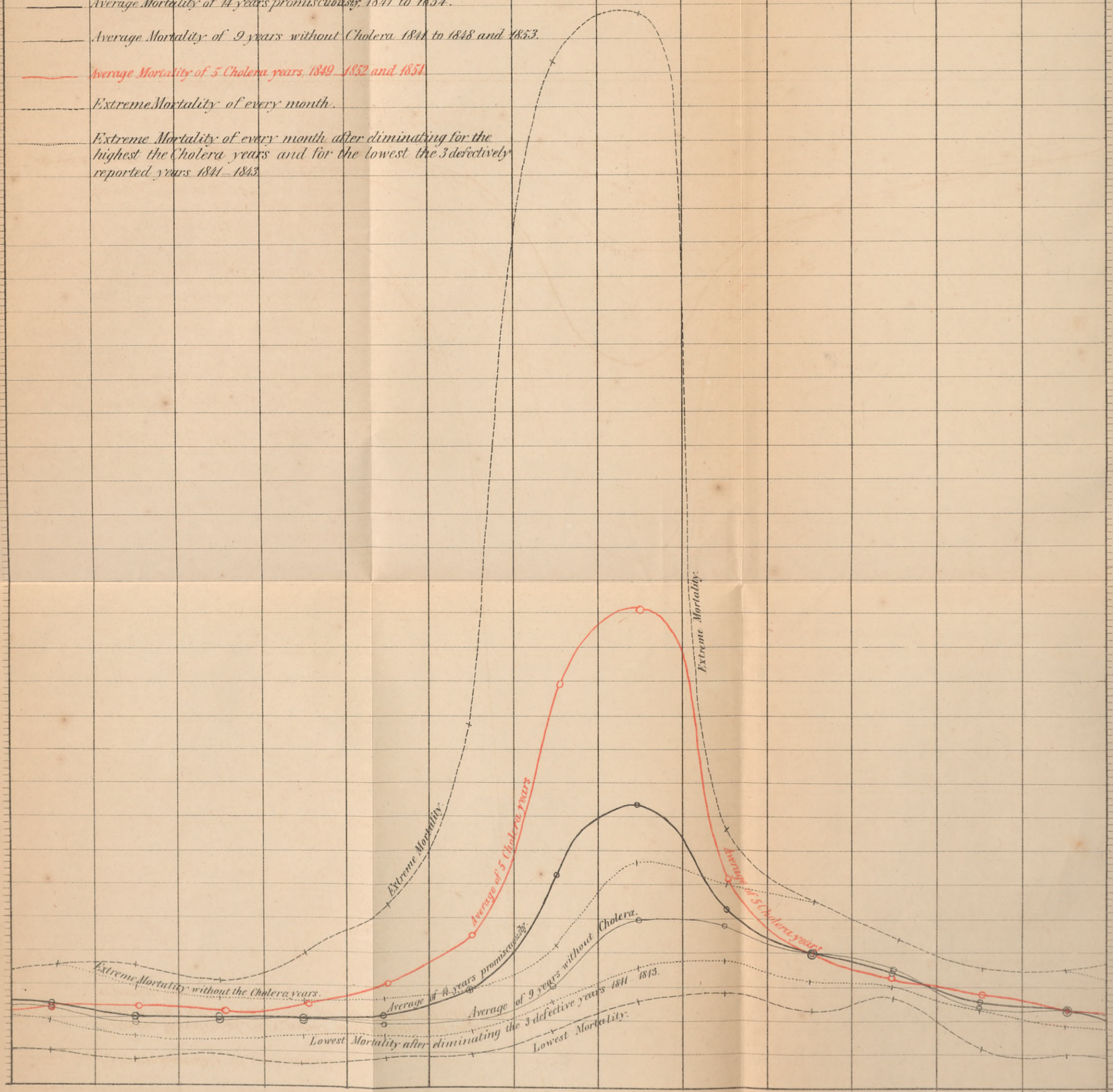
Average Mortality of 14 years promiscuously, 1841 to 1854.

Average Mortality of 9 years without Cholera 1841 to 1848 and 1853.

Average Mortality of 5 Cholera years, 1849–1852 and 1851.

Extreme Mortality of every month.

Extreme Mortality of every month after diminating for the highest the Cholera years and for the lowest the 3 defectively reported years 1841–1843.



Based on the results of the preceding table, is the following

Tabular Statement of the Monthly Ratio of Mortality in St. Louis for fourteen years, during five of which Cholera prevailed. The table showing the ratio of deaths to each thousand of population.

	Assumed population of mortuary limits.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Yearly total per mille.
1841 . .	30.000	0.9	0.8	0.7	1.2	1.7	2.3	6.7	5.5	3.7	3.7	2.2	2.7	32.0
1842 . .	34.000	1.5	2.2	1.7	0.9	1.0	1.9	2.4	2.7	2.2	2.6	1.1	1.0	21.2
1843 . .	38.000	0.7	1.0	1.2	0.8	0.9	1.7	5.6	6.1	4.3	3.5	2.2	2.3	30.5
1844 . .	43.000	2.1	2.3	1.9	2.1	1.7	2.6	5.6	6.0	4.5	3.4	2.2	2.5	36.7
1845 . .	48.000	2.2	1.3	1.7	1.6	2.7	4.0	4.9	4.5	4.5	3.4	2.3	2.2	35.4
1846 . .	54.000	2.0	2.2	2.7	2.4	2.2	3.2	5.7	4.8	4.5	3.6	2.3	2.2	38.0
1847 . .	62.000	2.5	2.5	2.5	2.5	2.7	4.0	6.5	5.9	5.5	4.5	3.6	3.5	46.2
1848 . .	70.000	2.9	2.7	2.8	2.6	2.8	4.1	4.4	3.8	3.1	3.2	2.7	3.4	38.6
1849* . .	80.000	3.6	3.1	4.0	5.3	10.8	30.3	31.4	5.5	4.1	3.2	2.5	2.2	106.2
1850* . .	90.000	2.7	1.7	2.2	2.6	3.9	6.0	12.8	7.6	3.5	2.7	2.8	1.9	50.4
1851* . .	100.000	1.5	1.7	1.9	1.9	2.1	10.1	8.6	4.6	3.6	3.2	2.5	2.2	43.9
1852* . .	110.000	1.7	2.6	2.2	2.6	2.7	5 6	6.8	6.6	4.0	3.6	3.2	2.7	44.4
1853 . .	117.000	2.6	2.3	2.6	2.5	2.2	2.7	3.3	4.0	3.8	3.0	2.3	2.0	33.2
1854* . .	127.000	1.8	1.8	2.0	3.0	3.6	7.8	11.8	7.1	4.9	4.2	2.8	2.7	53.5

RECAPITULATORY.

Average Mortality in St. Louis, in classes.

	I. First 3 years of the series, 1841, 2, 3, without cholera occurring in them.	II. Six subsequent years without cholera, 1844, 5, 6, 7, 8, and 1853.	III. Nine years without cholera, 1841, 2, 3, 4, 5, 6, 7, 8, and 1853.	IV. Five cholera years, 1849, 50, 51, 52, 54.	V. Average of the 14 years taken together.	VI. The 9 years without cholera (III.), may be more simply, and probably quite correctly stated, thus—
January	1.0	2.4	1.9	2.3	2.0	2
February	1.3	2.2	1.9	2.2	2.0	2
March	1.2	2.4	2.0	2.5	2.1	2
April	1.0	2.3	1.9	3.1	2.3	2
May	1.2	2.4	2.0	4.6	2.9	2
June	2.0	3.4	3.0	12.0	6.3	3
July	4.9	5.1	5.0	14.3	8.3	5
August	4.8	4.8	4.8	6.3	5.3	5
September	3.4	4.3	4.0	4.0	4.0	4
October	3.3	3.5	3.5	3.4	3.4	3
November	1.8	2.6	2.3	2.8	2.5	2
December	2.0	2.6	2.4	2.3	2.4	2
Total per mille, per year	27.9	38.0	34.6	59.7	43.6	34

In the presumptive table (VI.), the mortality of the first months of the year has been slightly increased, and that of the last three considerably diminished. This, it is presumed, will correct the

* Cholera years.

error of the table III., produced by the continuous increase of population during each year. The mortality of the year would then be ordinarily (excluding cholera years) one in thirty, in cholera years one in seventeen, and in the entire 14 years one in twenty-three. It is probable that in ordinary years the mortality varies from one in twenty-six to one in thirty-six, or from 28 to 38 per mille. (The three years in the first column were the first of our registration system, and may be suspected to be inaccurate as to the returns registered, for which reason we have varied our calculations, so as both to include and exclude them.)

Numerical Table showing the Mortality by Cholera in St. Louis, for five years, with the Ratio of the Mortality per mille of population, according to the official reports of the City Register. ENGELMAN.

	MORTALITY.					RATIO PER MILLE.				
	1849.	1850.	1851.	1852.	1854.	1849.	1850.	1851.	1852.	1854.
January .	36	13	2	4	1	00.4	0.1	...	...	...
February .	21	4	...	3	2	0.3	...	...	...	...
March . .	78	2	1	1	10	1.0	...	...	...	...
April . .	126	12	9	2	90	1.6	0.1	0.1	...	0.7
May . .	554	80	47	44	190	7.9	0.9	0.5	0.4	1.6
June . .	1746*	174	505	230	479	21.8	1.9	5.0	2.1	3.8
July . .	1689*	458	233	274	533	21.1	5.1	2.3	2.5	4.2
August . .	45	59	37	98	136	0.6	0.7	0 4	0.9	1.1
September .	13	16	9	41	55	0.2	0.2	0.1	0.4	0.4
October . .	3	21	...	53	20	...	0.2	...	0.5	0.1
November .	3	39	2	31	4	...	0.4	...	0.3	...
December .	3	5	...	21	13	...	...	...	0.2	0.1
Total . .	4317	883†	845	802	1533	54.0	9.8	8.4	7.3	12.0

* Dr. McPheeters gives for June and July, 1849, each 1,799 and 1,895. (*St. Louis Med. Journal*, January, 1850.) The sum of the daily reports published at the time (*Daily Organ*, St. Louis, August 16, 1849), states these months at 1,820 and 1,917.

† Dr. McPheeters gives the total of this year 994, reporting for June, 196, and for July, 531. (*St. Louis Med. Journal*, January,1851.)

Dr. McPheeters reports the total for 1849, at 4,555. (*St. Louis Med. Journal*, January 1850.) Dr. Reyburn (*St. Louis Union* and *St. Louis Probe*), reports it at 4,629.

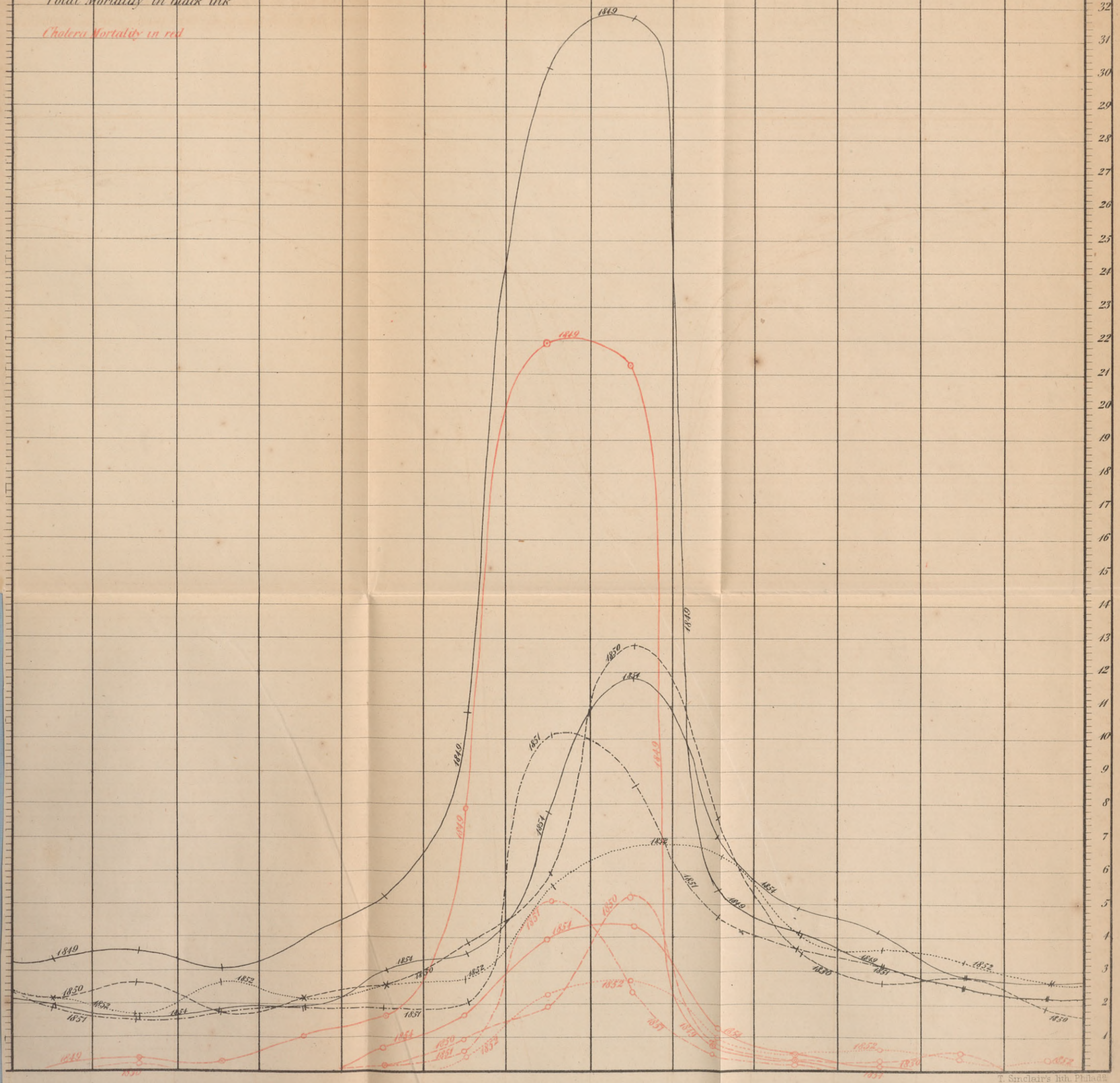


Diagram showing the Mortality in the 5 Cholera years at St Louis Mo. years 1849-54. Engelman.

T. Sinclair's lith. Philada.

Comparative Ratio of Mortality by Cholera and by other Diseases in the five Cholera Years in St. Louis. ENGELMAN.

	1849.			1850.			1851.			1852.			1854.		
	By cholera.	By other diseases.	Total.	By cholera.	By other diseases.	Total.	By cholera.	By other diseases.	Total.	By cholera.	By other diseases.	Total.	By cholera.	By other diseases.	Total
January	0.4	3.2	3.6	0.1	2.6	2.7	...	1.5	1.5	...	1.7	1.7	...	1.8	1.8
February	0.3	2.8	3.1	...	1.7	1.7	...	1.7	1.7	...	2.6	2.6	...	1.8	1.8
March	1.0	3.0	4.0	...	2.2	2.2	...	1.9	1.9	...	2.2	2.2	...	2.0	2.0
April	1.6	3.7	5.3	0.1	2.5	2.6	0.1	1.8	1.9	...	2.6	2.6	0.7	2.3	3.0
May	7.9	2.9	10.8	0.9	3 0	3.9	0.5	1.6	2.1	0.4	2.3	2.7	1.6	2.0	3.6
June	21.8	8.5	30.3	1 9	4.1	6.0	5.0	5.1	10.1	2.1	3.5	5.6	3.8	4.0	7.8
July	21.1	10.6	31.7	5.1	7.7	12.8	2.3	6.3	8.6	2.5	4.3	6.8	4.2	7.6	11.8
August	0.6	4.9	5.5	0.7	6.9	7.6	0.4	4.2	4.6	0.9	5.7	6.6	1.1	6.0	7.1
September	0.2	3.9	4.1	0.2	3.3	3.5	0.1	3.5	3.6	0.4	3.6	4.0	0.4	4.5	4.9
October	...	3.2	3 2	0.2	2.5	2.7	...	3.2	3.2	0.5	3.1	3.6	0.1	4.1	4.2
November	...	2.5	2 5	0.4	2.4	2.8	...	2.5	2.5	0.3	2.9	3.2	...	2.8	2.8
December	...	2.2	2.2	...	1.9	1.9	...	2.2	2.2	0.2	2.5	2.7	0.1	2.5	2.6
Total	54.0	52.2	106.2	9.8	40.6	50.4	8.4	35.5	43.9	7.3	37.1	44.4	12 0	41.5	53.5

The ratio above is per mille population.

FOREIGN IMMIGRATION.—As this influence has been referred to frequently in our report, and to show its relationship to the annual increase of population, we give the following, the only statistical data of immigration we have been able to obtain. These data are but partial returns of the annual immigration, as a large amount of population was in every year added to the city, which was not enumerated in the quarantine or other official documents.

Returns of Immigrants arriving at Quarantine Grounds, St. Louis, from July 5, 1851, *to December* 31, 1854.

	1851.	1852.	1853.	1854.
January . . .	No report	1139	1570	...
February . . .	"	1461	595	2718
March	"	2501	1530	2280
April	"	2155	1881	1768
May	"	2704	2382	3772
June	"	3032	2498	3237
July	411	1086	383	896
August	253	167	150	322
September . . .	38	173	25	85
October . . .	215	635	370	597
November . . .	2125	3075	2084	2678
December . . .	1315	2335	1577	1715
	4357	20,463	15,045	20,068

In January, 1854, and in two or three weeks in January, 1853 and 1852, the river was closed by ice; many immigrants then came up to the city by land. The number above reported falls short of the true amount, as infants were not enumerated, and frequently the boats reported false returns, to evade prosecution for carrying a greater number than allowed by law.

In 1852, about one-fourth were Irish, the remainder Germans; in 1853, very few Irish, but over 500 Mormons, mostly English. In 1854, the Mormon immigration increased to over 2,000; the Irish immigration ceased completely. In 1850 and '51, the Germans and Irish made each nearly one-half of the immigration. *Authority*, Leavenworth, M. D.

Statistics of German Immigration to the Port of St. Louis, from March, 1854, to May, 1855. (From Records of the German Immigrant Society.)

Months.	Via New Orleans.	Via Eastern Routes.	Total.
March, April, May . .	7751	2560	10311
June, July August . . .	2205	2300	4505
September, October, November	4535	2800	7335
December, January, February	2785	1900	4685
	17,276	9560	26,836

Immigration during seven years.	*German, per above authority.*
1848 to 1849	9,000
1849 to 1850	14,403
1850 to 1851	10,715
1851 to 1852	14,624
1852 to 1853	20,088
1853 to 1854	18,535
1854 to 1855	26,836
Total . . .	114,201

About one-third of the number landed at quarantine reported their permanent destination to be St. Louis. About one-fifth of the German immigration were destined for St. Louis. No doubt a much larger proportion ultimately settled in the city.

(The numerical statements in the report on the diseases of St. Louis, will be found to differ in some respects from those on the same subject published in different years in the *St. Louis Medical and Surgical Journal.* The writer in the Journal has taken his data from the manuscript registration of interments in the City Register's office. We have taken ours from the same source, but have been careful to compare the manuscript registry with the

"sexton's weekly returns" of interments, from which the official registry is transcribed. By doing this we have in some instances been able to detect inaccuracies in the transcript, and thereby avoided them in our paper. The calculations in the registry we found to be frequently inaccurate, so we have depended exclusively on our own enumerations of interments, to the exclusion of the City Register. The weekly reports of interments in the cemeteries around St. Louis are published every Tuesday by the Register, and as Sunday, the closing day of each weekly report, is not always the last day of a month, weeks that are the intercurrent of two months must represent portions of the mortality of each month. In estimating a monthly mortality from weekly tables, the mortality of a week intercurrent of two months should be divided according to the number of the days of each month; that is, where a weekly report includes the mortality of the final days of one month, and the first days of the month succeeding, the sum of the weekly report must be divided according to the number of days of each respective month contained in the weekly report. Thus: a weekly report terminating July 4, must have its sum of mortality divided in such a way as to give three-sevenths to the month of June, and four-sevenths to the month of July. This is, at best, but an approximation to the correct result, but it is more accurate than to include the sum of five weeks in a month, which must be the case if the plan we propose is not adopted; and it changes materially the estimates of monthly mortality where the weekly mortality is great. The reported daily mortality by cholera, cholera infantum, diarrhœa and dysentery, in the report on the year 1854, represents the actual mortality, and not the interments of each day. We obtained these reports from the sextons' returns, which contain the date of the deaths.—R.)