

Monthly Mortality in Finland in 1751—1806

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Foreword

The high mortality and great annual and regional variations in mortality characteristic of the pre-industrial period in Finland and elsewhere have been well known for a long time. Nevertheless, consensus has not yet been reached as to their causes. The debate continues as to what role was played by background factors such as nutritional and climatic factors and what was the significance of diseases, especially contagious diseases. In what way do these factors intercorrelate and form a causal relationship?¹

This study attempts to throw light on this question by analyzing monthly mortality.² As Finland was situated in the agricultural periphery and the probability of crop failure was great due to climatic factors, one could assume that especially during the spring death by starvation would have threatened the poorest section of population, in particular. In addition, it seems natural that the large climatic variations and particularly the hard winters as such — not only crop failure — would have caused a rise in mortality. How did the level of mortality differ during the summer and the autumn? One could expect that the improved nutritional situation during the summer and autumn (game, fish, berries, the grain harvest, cow's milk etc.) as well as the sunny weather and long hours of sunlight would have strengthened the people's resistance toward illness and disease and consequently decreased mortality.

As a whole monthly mortality forms a very extensive network of problems which cannot be exhaustively studied in this context. That is why little attention will be paid here to the differences between social groups and a more detailed analysis of the causes of death will be bypassed. Primarily this study attempts to answer the following three questions:

1. What was the monthly distribution of mortality in Finland in the years 1751—1806?
2. What were the observed regional differences?
3. What were the monthly differences during the years of high and low mortality?

¹ For recent discussion see also e.g. McKeown 1976, Bardet 1978, Imhof 1978.

² The first more extensive study concerning Sweden in this matter was carried out by Berg (1879). Later the question has been touched upon by Jutikkala & Kaupinen 1971, Imhof 1976 and Turpeinen 1978, among others.

The main sources used in answering these questions were the population and population change tables which are kept in the Archives of the Swedish Central Bureau of Statistics.

General view

In the years 1751—1806 977 498 cases of death were registered in Finland. Their monthly distribution is presented in table 1 of the appendix. The number of deaths was highest in May (95 990) and lowest in November (66 292). Taking into account the varying lengths of the months, the average daily mortality rate was highest in April and lowest in October (see also figure 1). In addition it was observed that the difference between these two culminating months was considerable and that the curve declined quite regularly from April to October and started to rise thereafter. This seems to indicate a clear causal relationship: the autumn harvest decreased mortality and the poor nutritional situation of the spring increased it.

This clear-cut picture becomes more complicated when the study of mortality is based on two variables: age-specific death rates (persons aged under 10, persons aged 10 or over) and observations on the monthly development of these death rates.

When the curves of these two variables are examined, a large difference can be noticed. In the age group of under-10-year-olds the highest monthly mortality rate was in July, and in August it was still greater than in the spring and the winter. On the other hand, the mortality rate in the group aged 10 years and over was higher in the spring and the winter than at other times of the year. The fewest cases of death in this age group occurred in August. In the group under 10 years of age the minimum was in November.

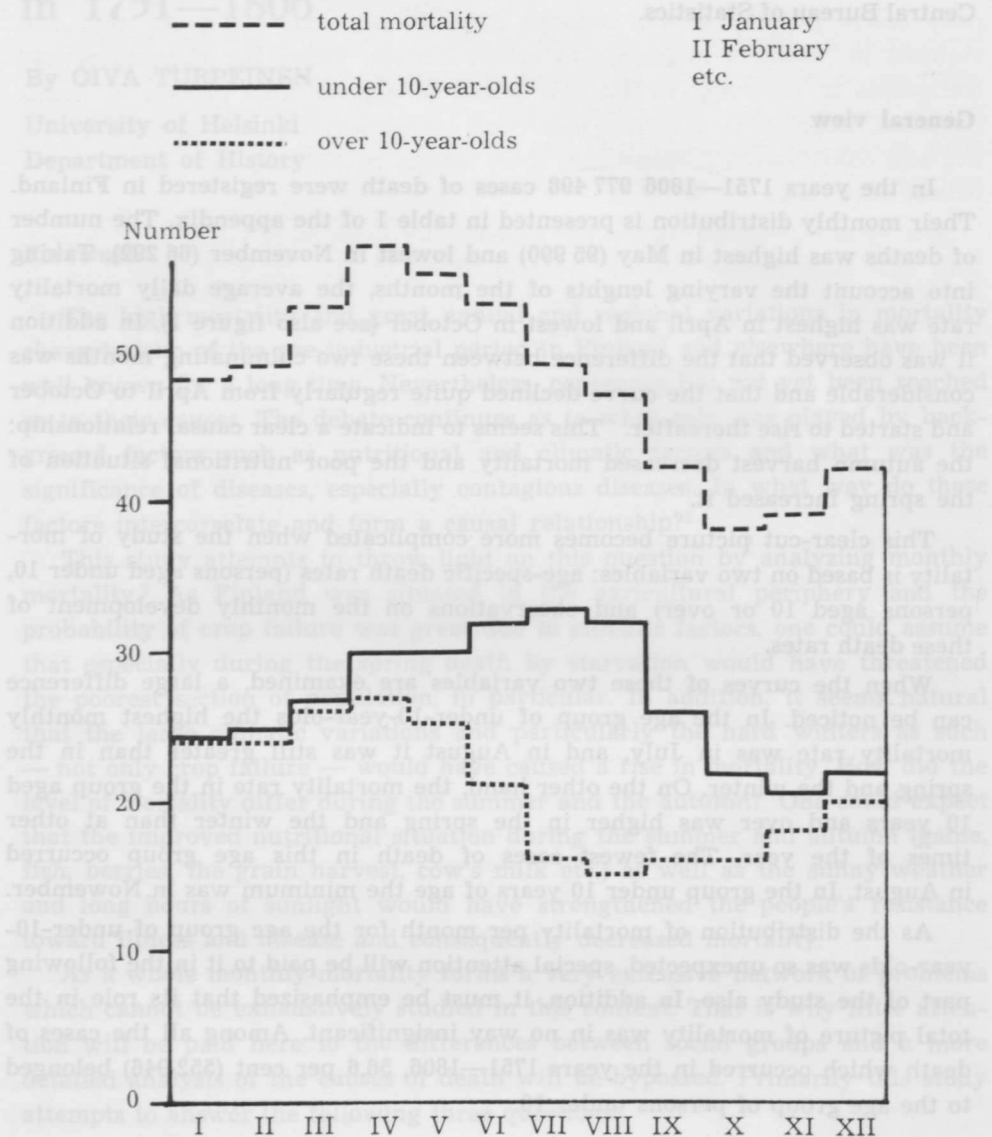
As the distribution of mortality per month for the age group of under-10-year-olds was so unexpected, special attention will be paid to it in the following part of the study also. In addition, it must be emphasized that its role in the total picture of mortality was in no way insignificant. Among all the cases of death which occurred in the years 1751—1806, 56,6 per cent (552 946) belonged to the age group of persons under 10.

Regional differences

In the years 1752—1773

Regional differences are examined here by comparing total mortality and also the mortality of persons under 10 years and persons aged 10 and over according to province during the years 1752—1773 (see tables 2—4 in the

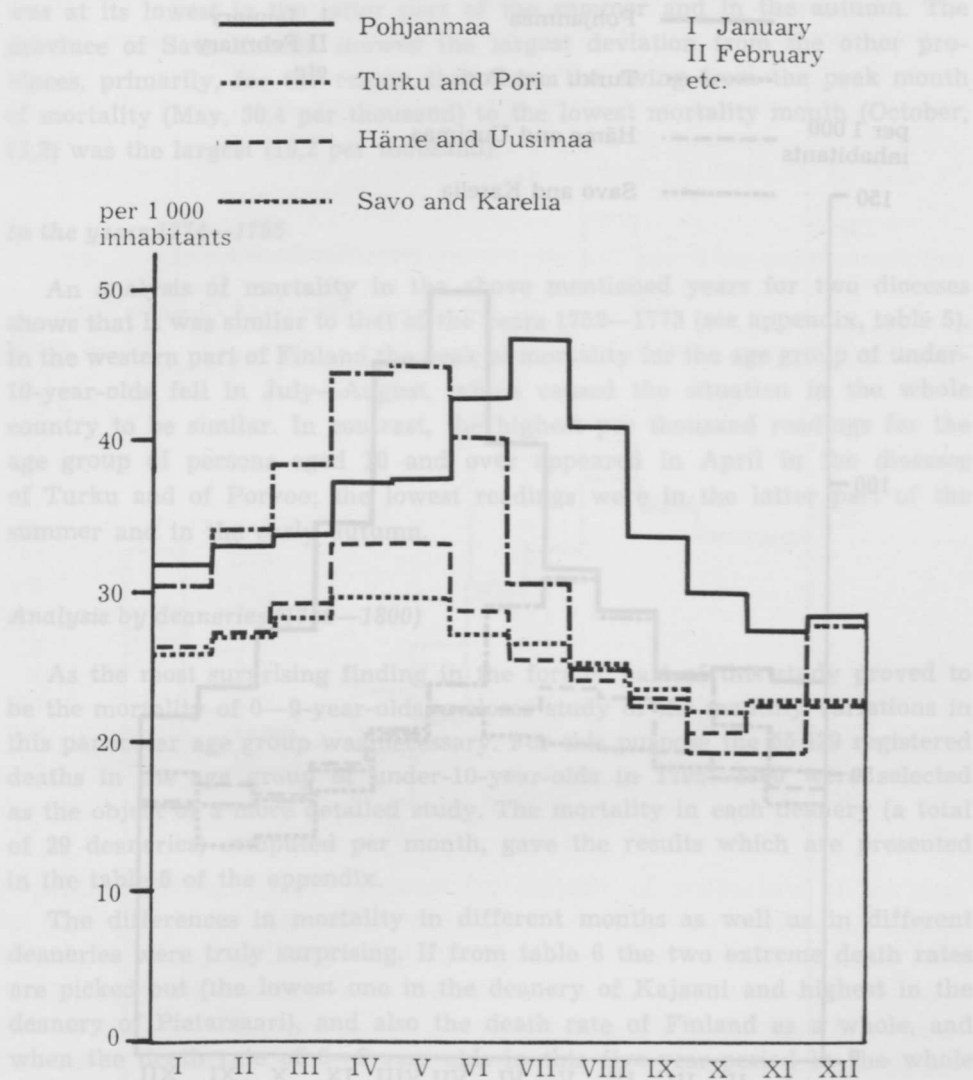
Figure 1. Mean daily death rate per month in Finland in the years 1751—1806.



appendix and figures 2—4).³ A first glance at these tables shows that large variations in monthly mortality occurred between provinces. The most stable monthly development in mortality was found in the province of Turku and Pori where the swing from the smallest to the largest monthly reading per

³ To enable a comparison between yearly and monthly mortality as well as between in different regions, the February mortality is multiplied by 12,9 (leap years are taken into account), months which contain 30 days by 12,17 and the mortality in other months (31 days) is multiplied by 11,77.

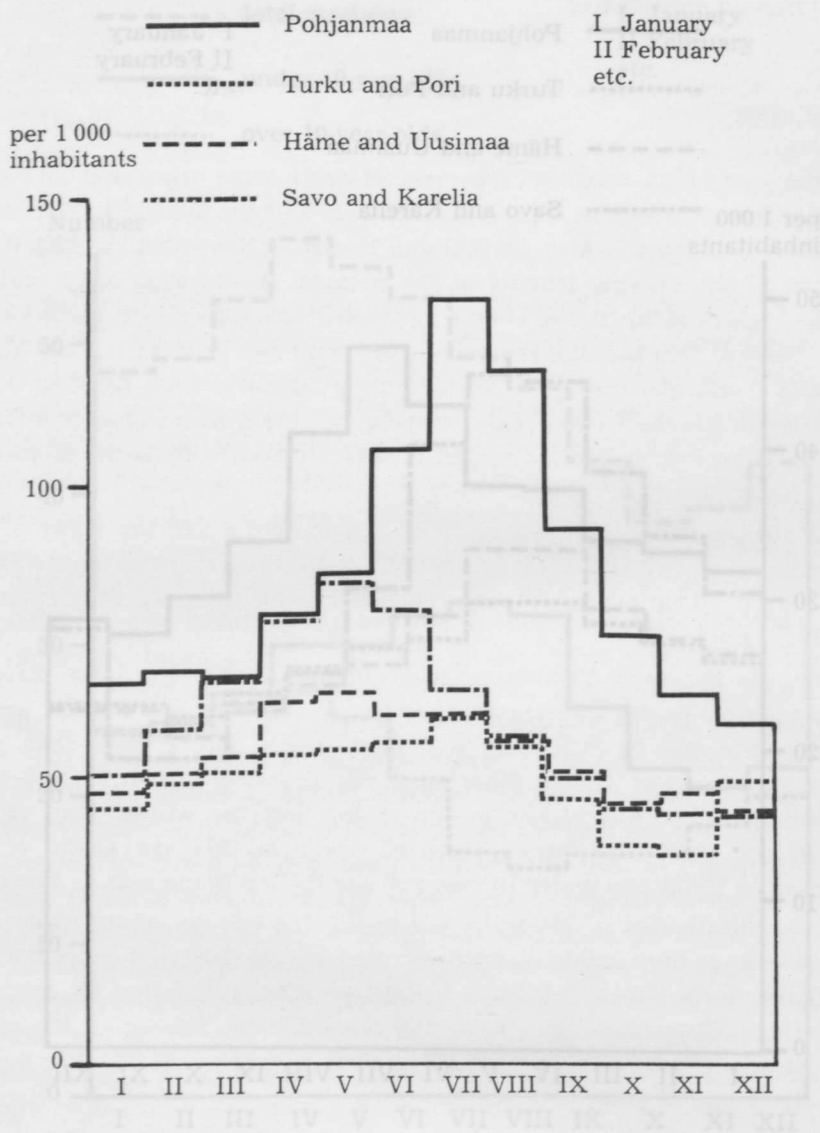
Figure 2. Total mortality in the provinces of Finland in the years 1752—1773.



thousand was 7.7. In contrast in the area of Savo-Karelia the corresponding swing was as large as 25,6 per thousand (44,7 in May and 19,1 in November). It is easy to note that especially the province of Pohjanmaa differed considerably from the situation in other provinces. There the peak of mortality was centered clearly on the summer months. In the three other provinces, however, the highest readings appeared in the months of April and May.

This picture is altered somewhat when the monthly mortality of persons aged under 10 and aged 10 and over is analyzed during the same period province by province. First it is observed that the high mortality readings of the pro-

Figure 3. Mortality of persons under 10 years of age per months in the provinces of Finland in the years 1752—1773.



vince of Pohjanmaa were caused primarily by the high mortality of the age group under 10 years, whereas the mortality among the age group 10 years and over proved to be much smaller than in the three other provinces. Secondly it is seen that the surprisingly high mortality of Pohjanmaa was focused on the summer months in particular. A similar phenomenon is observed in the province of Turku and Pori, although on a much smaller scale. In contrast in the two other provinces the peak of mortality for the age group in question was in the month of May.

In the age group 10 years and over the variations in monthly mortality in

different provinces proved to be considerably smaller than among under 10 years of age. In all the provinces the mortality peak fell in April. Mortality was at its lowest in the latter part of the summer and in the autumn. The province of Savo-Karelia showed the largest deviation from the other provinces, primarily, for the reason that there the swing from the peak month of mortality (May, 30,4 per thousand) to the lowest mortality month (October, 11,2) was the largest (19,2 per thousand).

In the years 1774—1795

An analysis of mortality in the above mentioned years for two dioceses shows that it was similar to that of the years 1752—1773 (see appendix, table 5). In the western part of Finland the peak of mortality for the age group of under-10-year-olds fell in July—August, which caused the situation in the whole country to be similar. In contrast, the highest per thousand readings for the age group of persons aged 10 and over appeared in April in the dioceses of Turku and of Porvoo; the lowest readings were in the latter part of the summer and in the early autumn.

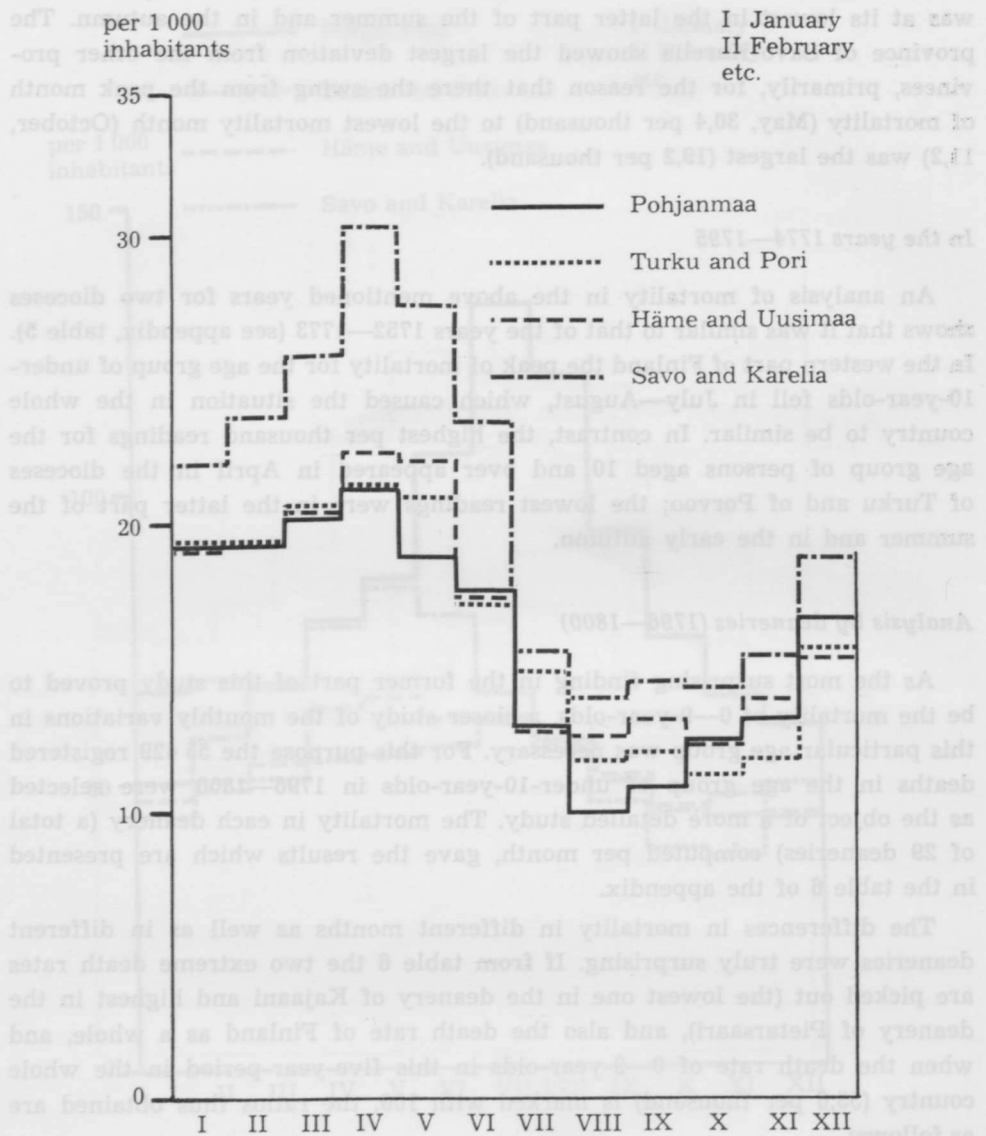
Analysis by deaneries (1796—1800)

As the most surprising finding in the former part of this study proved to be the mortality of 0—9-year-olds, a closer study of the monthly variations in this particular age group was necessary. For this purpose the 55 429 registered deaths in the age group of under-10-year-olds in 1796—1800 were selected as the object of a more detailed study. The mortality in each deanery (a total of 29 deaneries) computed per month, gave the results which are presented in the table 6 of the appendix.

The differences in mortality in different months as well as in different deaneries were truly surprising. If from table 6 the two extreme death rates are picked out (the lowest one in the deanery of Kajaani and highest in the deanery of Pietarsaari), and also the death rate of Finland as a whole, and when the death rate of 0—9-year-olds in this five-year-period in the whole country (53,6 per thousand) is marked with 100, the ratios thus obtained are as follows:

	I	II	III	IV	V	VI	
Pietarsaari	101	111	132	152	153	243	
Kajaani	62	51	58	80	72	45	
Finland	89	93	97	109	112	123	
	VII	VIII	IX	X	XI	XII	XII—XII—XII
Pietarsaari	299	241	170	132	90	95	161
Kajaani	51	41	23	35	33	41	49
Finland	22	113	93	87	78	82	100

Figure 4. Mortality of persons over 10 years of age per month in the provinces of Finland in the years 1752—1773.



Thus the ratio in the deanery of Kajaani for the five-year-period turned out to be 49, whereas in the deanery of Pietarsaari it was as high as 161. Furthermore the distribution of the monthly mortality of 0—9-year-olds differed to a large extent in these deaneries. In the deanery of Kajaani the peak of mortality fell in April (ratio 80) and the lowest point (23) in September, whereas in Pietarsaari the peak fell in July (299), and the lowest point in November (90).

Urban and rural areas

As the urban population at the end of the 18th century and at the beginning of the 19th century was about 5 % of the total population (Turpeinen, 1977), the former analysis gives a good picture of the monthly mortality in the rural areas. But what was the mortality of persons under 10 years of age in the urban areas? In order to throw light on this aspect of mortality, the question is approached by examining all the towns in Finland. In table 1⁴,

Table 1. Mortality of persons under 10 years of age in the urban areas, per month

Month	Stockholm 1796—1800	Stockholm 1801—1805	towns in Finland 1802—1805
I	97,0	97,4	72,1
II	105,1	83,7	70,3
III	105,1	88,8	70,0
IV	100,7	94,0	78,5
V	93,6	101,2	77,2
VI	105,4	94,4	86,6
VII	116,3	120,3	75,4
VIII	120,7	115,4	70,9
IX	139,0	90,1	64,9
X	121,1	78,1	62,4
XI	109,7	74,2	75,1
XII	103,3	84,2	62,4
I—XII	109,9	93,7	71,7
Number	6 483	5 590	2 812

in which Stockholm is also included for the sake of comparison, shows that the peak of mortality for persons under 10 years of age appeared in the month of June in the years 1802—1805. In Stockholm also mortality in the corresponding group was highest in the summer: in the years 1801—1805 in July and 1796—1800 in September. On the other hand, it is quite easy to observe that the mortality of persons under 10 years of age in Finnish towns was not so clearly different from mortality in other seasons, as was the case in the deaneries of Vaasa, Pietarsaari and Kokkola.

The highest and lowest years of mortality

When monthly mortality varied to such a large degree from region to region, there is reason to see, how mortality varied from year to year. For this purpose the years of lowest mortality (less than 22,0 per thousand) and, on the

⁴ For the mortality of persons under 10 years of age in Finland in 1802—1805 see also Turpeinen 1978 A, 202.

other hand, the years of highest mortality (over 34,0 per thousand) were selected as objects of a closer study. Each group consisted thus of 8 years (table 2).

The most interesting feature in table 2 was that the development of mortality in both groups A and B followed approximately the same trends. In each group the peak of mortality of persons under 10 years of age coincided in July. However, a slight difference is observed for persons aged 10 and over. As in group A (the highest mortality years) an increase was noticed during the winter months which reached its culmination in the month of April, in group B (the lowest mortality years) no similar development was perceptible in the spring months. For persons aged 10 years and over mortality in both groups A and B was lowest in August—September; for 0—9-year-olds the smallest readings appeared in November—December.

Table 2. Mortality per month in years of highest (A) and lowest (B) mortality

Month	Total Mortality		Persons under 10 years of age		Persons aged 10 years and over	
	A	B	A	B	A	B
I	38,3	22,9	61,7	40,1	29,9	16,6
II	39,7	22,1	67,9	40,9	29,6	15,2
III	42,4	21,8	74,2	40,5	30,9	14,9
IV	47,3	23,8	86,9	45,2	33,0	15,9
V	47,4	22,8	92,0	45,9	31,4	14,4
VI	43,0	22,3	90,7	48,8	25,8	12,6
VII	38,3	21,2	95,1	51,3	17,9	10,2
VIII	35,8	20,5	90,0	48,9	16,3	10,1
IX	30,2	18,2	68,7	41,2	16,4	9,7
X	28,2	18,9	57,0	39,6	17,8	11,3
XI	29,9	18,9	53,0	36,0	21,6	12,6
XII	32,9	18,8	54,0	35,5	25,4	12,7
I—XII	37,8	21,0	74,4	42,9	24,6	13,0
Number						
I—XII	157 487	104 793	83 049	57 274	76 438	47 519

Group A = years: (mortality in parentheses) 1754 (34,9), 1756 (36,4), 1763 (41,2), 1788 (34,1), 1789 (38,2), 1790 (38,4), 1791 (40,6).

Group B = years: 1773 (21,2), 1774 (21,3), 1779 (21,8), 1780 (21,1), 1797 (20,3), 1801 (21,8), 1805 (21,2).

Discussion

How is it to be explained that the peak and the bottom readings of mortality were manifested in the same seasons both during the high and low mortality years? And how are the great regional differences in the distribution of the monthly mortality to be explained? When approaching the first question

with the hypothesis that the years of crop failure due to climatic factors had caused an increase in mortality during the spring months, this should have proved to be true, in particular, in the years of high mortality. Peak readings for those under 10 years of age were reached, however, in the month of July. As we know on the basis of former research the years of crop failure did not always lead to high mortality and mortality even after good harvest years might rise to high readings (Turpeinen 1976), the above information seems in compliance with this picture. This indicates that the differences in monthly mortality were not decisively caused by the years of crop failure, but by other factors; quite evidently by unforeseeable contagious diseases.

What about regional differences? How do they fit in this picture? First, it is noted that mortality was highest in the more prosperous regions, while in the poorer regions it appeared at a rather low level (Turpeinen 1973, pp. 146—148) and see also the appendix, table 6). Thus there is only a slight positive correlation with wealth and standard of living. When assuming that the underlying factors were contagious diseases, what was the relationship between the mobility of the population during different seasons and the regional variations in mortality per month. To a certain extent a positive correlation was prevalent.

Especially in the littoral of Pohjanmaa people traveled quite a lot during the summer. At that time it was usual to make sailing tours for example to Stockholm (see e.g. Aspelin 1892, pp. 263—264, Nordlund 1931, pp. 274 ff., Tegengren 1941, pp. 231, Åkerblom 1923, pp. 146 ff.). It is probable that germs, bacteria and viruses that caused contagious diseases were often caught during these trips. Therefore the prevalence of high mortality during the summer months in Finnish towns, in the littoral of Pohjanmaa, in Ahvenanmaa and also in Stockholm, could to a large extent be explained by the mobility of the population in the summer season and by contagious diseases.

What about the interior of Finland? Was the population more mobile during the winter and the spring than in other seasons? As trade connections towards Viipuri became more difficult and were even cut off to a large degree after the Peaces of Uusikaupunki (1721) and of Turku (1743), trade in the inland was directed more actively toward the Gulf of Bothnia. As travel along the waterways was quite difficult, the majority of the trade was carried out during the wintertime and even in the spring when the surface of the snow was hard enough. In addition, in winter trade was carried on across the Finnish—Russian border, even to such far regions as Kemi in Russia. On the other hand, the yearly rhythm of work meant that more time was left in winter than in other seasons to carry out long journeys (see e.g. Gebhard 1885, pp. 57—59, Tyrkkö 1948 p. 194, Virrankoski 1961, p. 197, Wirilander 1960, pp. 498 ff.)

Thus good arguments can be found for the theory that large-scale mobility in wintertime accelerated the spread of contagious diseases thus increasing the mortality rate of that season in the interior of Finland. In addition to the

above mentioned factors, the role of the different modes of settlement also needs to be considered. In the interior the population was sparse and scattered, unlike the river basins of Southern and Central Pohjanmaa, for instance, where concentration into conglomerations, was common.

Nevertheless the phenomenon in question cannot be explained merely by alluding to the spread of contagious diseases through air, insects and contact. Diseases spread by the intermediation of provisions and especially through water must be taken into consideration as well. As has already been shown elsewhere (e.g. Turpeinen 1978), for example in deanery of Pietarsaari in the latter part of the 18th century mortality among persons aged 10 years and over was not higher than the general level in the whole country. The unusually high mortality was primarily caused by infant mortality. This was also true for the years 1796—1800. In the deanery of Pietarsaari during the five-year-period in question 79,5 per cent of persons dying under 10 years of age were infants. The corresponding reading in the deanery of Kokkola was 76,8 and in the deanery of Vaasa 62,4.

What factors caused infant mortality to vary from region to region? First, it should be pointed out that this phenomenon was not limited only to Finland, but was Pan-European (found also in Sweden, Island and Germany for example). In several contexts contemporaries laid stress on the fact that neglecting to breast-feed babies occasioned high mortality readings (see e.g. Hellstenius 1884, Imhof 1976, p. 306, 984, 1005 and Lee 1977, p. 160). Most significant in failing to nurse babies was not that children of under one year of age were fed cow's milk (even if that may have had a certain influence as a mortality-affecting factor), but that this latter form of feeding created good ground for the spread of contagious diseases through food and water (Turpeinen 1978, p. 532). When the ice and snow started to melt in the spring, flood-water containing germs and other causes of disease got easily into wells in the towns and in the densely populated river basins (in Southern Pohjanmaa, for example). The polluted and uncooked drinking water caused sickness directly (when given to a child) or indirectly (when used in washing of milking dishes and the cow's udders, and also in washing the feeding utensils of the children, such as a cow's horn for example), children under one year of age and led to an increase in mortality, which due to the previous factors tended to rise in the spring and reached its highest point in the summer months.

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Appendix

Table 1. Monthly mortality in Finland in 1751—1806 (I = January, II = February, III = March, etc.)

Age	Number of deaths per age group					
	Under 10 years		10 years and over		Total	
	Number	Average per day	Number	Average per day	Number	Average per day
Month						
I	41 450	24	42 591	24	84 041	48
II	39 743	25	38 552	24	78 295	49
III	46 104	27	45 337	26	91 441	53
IV	50 081	30	45 265	27	95 346	57
V	53 059	30	42 931	25	95 990	55
VI	53 512	32	35 632	21	89 144	53
VII	57 535	33	28 101	16	85 636	49
VIII	55 853	32	26 098	15	81 951	47
IX	43 614	26	26 132	16	69 746	42
X	38 992	22	28 071	16	67 063	38
XI	35 728	21	30 564	18	66 292	39
XII	37 275	22	35 278	20	72 553	42
I—XII	552 946	27	424 552	21	977 498	48

Table 2. Monthly mortality in the provinces of Finland in 1752—1773 (I = January, II = February, etc.)

Month	Mortality per 1000 persons				
	Pohjanmaa	Turku—Pori	Häme—Uusimaa	Savo—Karelia	Finland
I	32,5	25,9	26,4	30,6	28,6
II	33,1	27,1	27,4	34,1	30,2
III	33,7	28,5	29,3	38,3	32,2
IV	37,3	29,7	33,1	44,5	35,7
V	37,5	29,7	33,2	44,7	35,9
VI	42,7	27,2	28,7	40,2	34,0
VII	46,7	26,6	25,4	30,5	31,5
VIII	41,0	25,2	24,2	25,0	28,2
IX	33,8	23,5	23,0	22,3	25,3
X	29,9	22,0	20,7	19,2	22,7
XI	27,6	22,7	22,6	19,1	22,8
XII	28,5	22,7	22,6	27,9	25,2
I—XII	35,4	25,9	26,4	31,6	29,4
Number (I—XII)	81 913	85 925	69 934	83 905	321 677

Table 3. Monthly mortality of persons under 10 years of age in the provinces of Finland in 1752—1773 (I = January, II = February, etc.)

Month	Mortality per 1000 persons under 10 years of age				Finland
	Pohjanmaa	Turku—Pori	Häme—Uusimaa	Savo—Karelia	
I	65,7	44,5	47,2	50,1	51,2
II	68,1	48,9	50,2	57,7	55,7
III	67,4	50,7	53,7	66,7	59,3
IV	77,8	53,1	62,7	76,6	66,9
V	84,3	54,6	64,2	83,5	71,0
VI	105,9	55,4	60,4	78,1	73,5
VII	131,7	59,9	60,7	64,8	76,9
VIII	119,6	56,6	56,4	55,5	69,9
IX	91,6	49,1	50,8	45,7	57,8
X	73,6	43,9	44,0	37,3	48,6
XI	63,6	43,1	46,8	35,6	46,4
XII	58,3	42,6	43,0	48,6	47,7
I—XII	84,1	50,2	53,4	58,4	60,5
Number (I—XII)	55 449	43 842	37 426	47 676	184 393

Table 4. Monthly mortality of persons aged 10 years and over in the provinces of Finland in 1752—1773 (I = January, II = February, etc.)

Month	Mortality per 1000 persons aged 10 years and over				Finland
	Pohjanmaa	Turku—Pori	Häme—Uusimaa	Savo—Karelia	
I	19,2	19,3	19,0	22,0	19,8
II	19,2	19,3	19,2	23,7	20,3
III	20,2	20,6	20,5	25,8	21,7
IV	21,2	21,4	22,4	30,4	23,7
V	18,8	20,9	22,1	27,6	22,3
VI	17,6	17,1	17,3	23,5	18,8
VII	12,8	14,8	12,8	15,5	14,0
VIII	9,8	13,9	12,6	11,7	12,2
IX	10,8	14,4	13,1	12,0	12,8
X	12,5	14,2	12,3	11,2	12,7
XI	13,2	15,4	13,9	11,8	13,7
XII	16,6	15,6	15,2	18,7	16,5
I—XII	16,0	17,2	16,7	19,5	17,4
Number (I—XII)	26 464	42 083	32 508	36 229	137 284

Table 5. Monthly mortality of persons under 10 years of age, persons aged 10 years and over and of the total population in the dioceses of Turku and Porvoo in 1774—1795 (I = January, II = February, etc.)

Month	Mortality per 1 000 persons								
	Age under 10 years			10 years and over			Total		
	Turku	Porvoo	Finland	Turku	Porvoo	Finland	Turku	Porvoo	Finland
I	53,1	52,0	52,7	19,7	21,9	20,6	28,3	30,4	29,2
II	53,5	53,9	53,7	18,3	22,3	19,9	27,4	31,2	28,9
III	56,0	61,3	58,3	18,6	24,2	20,8	28,2	34,6	30,8
IV	62,4	67,6	64,6	19,4	25,8	21,9	30,5	37,6	33,3
V	63,0	67,9	65,1	17,6	23,1	19,7	29,3	35,7	31,9
VI	68,9	68,7	68,8	15,4	19,9	17,2	29,2	33,6	31,0
VII	78,8	62,5	71,9	12,4	13,8	13,0	29,5	27,5	28,7
VIII	83,4	63,9	75,1	12,5	13,3	12,8	30,7	27,6	29,5
IX	64,9	52,3	59,5	13,0	14,0	13,4	26,3	24,8	25,7
X	56,5	44,8	51,5	14,0	13,4	13,8	25,0	22,2	23,9
XI	51,0	45,0	48,5	15,8	15,6	15,7	24,9	23,9	24,5
XII	48,1	47,4	47,8	16,5	18,0	17,1	24,7	26,3	25,3
I—XII	61,7	57,3	59,9	16,1	18,7	17,1	27,9	29,6	28,6
Number (I—XII)	140 859	96 152	237 011	105 948	80 161	186 109	246 807	176 313	423 120

Table 6. The number of death per month among persons under 10 years of age per 1 000 persons of the average population in this age group in the deaneries of Finland in 1796—1800. (I = January, II = February, etc.)

Deanery	Number (I—XII)	Number												total
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Turku	2 068	56,4	47,7	49,2	60,8	53,2	52,0	55,1	57,9	42,2	41,9	53,8	42,8	51,1
Mynämäki	1 055	50,1	43,1	60,5	70,9	71,4	53,6	50,1	40,3	36,9	46,7	45,3	43,8	51,6
Vehmaa	1 206	39,9	47,9	48,3	60,1	41,7	55,8	53,9	47,8	39,8	55,3	40,7	46,4	48,0
Pori	2 288	47,1	41,9	40,9	45,6	54,8	57,5	64,8	53,3	45,9	44,4	41,0	40,1	48,4
Tyrvää	1 797	37,3	36,1	40,1	41,4	47,6	48,3	58,4	49,3	38,8	46,2	34,0	30,1	42,5
Perniö	1 561	49,3	56,7	39,0	44,4	39,0	41,0	57,5	44,0	36,9	35,4	40,0	43,6	43,8
Åland	993	75,9	96,3	76,8	55,4	55,4	59,1	81,3	99,2	64,7	71,5	68,4	92,9	75,4
East-Raasepori	1 275	58,9	64,2	56,7	55,4	49,6	49,5	39,1	46,1	38,2	35,1	38,2	41,7	47,6
West-Raasepori	986	47,5	55,0	47,0	54,9	32,4	40,3	36,4	37,9	30,8	33,4	44,4	49,0	42,4
Orivesi	1 177	46,6	30,2	48,6	51,7	68,2	57,3	51,0	46,6	49,7	42,7	49,2	44,6	49,1
Hattula	937	45,3	43,4	44,3	40,3	49,2	39,8	45,3	34,6	25,7	33,6	30,2	33,1	38,8
Hämeenlinna	1 433	56,3	52,1	58,1	68,8	63,7	60,5	61,2	63,0	56,4	42,9	30,9	39,3	54,4
Porvoo	840	80,7	65,8	56,2	60,0	66,2	64,7	83,5	78,9	56,3	62,6	50,6	49,9	64,7
Uusimaa	1 536	63,6	68,3	56,6	79,2	90,1	78,7	68,1	65,6	55,9	43,1	48,7	66,1	65,3
Hauho	2 299	45,4	50,8	51,1	51,5	63,7	66,4	60,4	48,5	42,4	39,7	41,1	43,3	50,4
Kymi	2 492	62,6	53,6	44,8	63,2	67,7	60,0	78,9	72,3	59,1	65,2	49,6	50,8	60,8
Eastern Häme	2 859	56,7	63,8	66,4	58,1	63,8	78,7	73,0	75,3	54,0	54,6	57,3	62,7	63,8
Southern Savo	2 864	32,5	46,1	50,9	67,3	59,1	61,1	52,6	51,3	33,5	27,7	27,3	34,8	45,5
Karelia	3 508	39,3	43,6	54,7	57,2	67,5	66,1	46,9	41,3	43,2	39,0	37,5	42,1	48,1
Northern Savo	4 125	33,2	33,2	42,3	53,0	51,0	51,6	42,1	35,6	34,4	37,6	29,8	37,2	40,2
Tampere	330	26,1	31,6	35,3	35,1	61,4	62,1	54,8	41,8	28,3	23,5	14,8	23,5	36,6
Vaasa	5 112	56,4	73,7	78,9	70,5	81,2	111,6	121,7	114,9	96,7	68,9	54,0	56,8	82,2
Pietarsaari	3 843	54,3	59,4	70,7	81,3	81,8	130,4	160,4	129,0	91,1	70,9	48,0	50,9	86,1
Kokkola	2 050	68,7	58,3	71,8	70,5	71,3	105,6	110,1	116,8	71,0	70,4	60,4	66,9	77,7
Jyväskylä	1 039	35,6	42,4	37,6	51,3	50,6	69,7	52,5	48,7	40,7	32,8	23,9	24,6	41,0
Raabe	2 628	45,2	48,5	45,7	63,1	68,1	72,4	63,1	68,9	64,4	63,9	56,8	41,7	59,0
Oulu	1 895	58,5	55,6	54,3	57,7	62,2	65,1	60,3	65,6	67,8	64,8	59,7	51,7	60,3
Kajaani	651	33,0	27,4	31,1	43,1	38,4	24,3	27,3	22,0	12,4	18,7	17,8	22,0	26,5
Kemi	582	45,5	34,4	51,1	57,8	46,4	65,6	63,6	52,1	50,9	42,6	29,4	23,7	46,8
Finland	55 429	47,7	49,6	52,1	58,3	60,1	65,7	65,4	60,3	49,6	46,7	42,0	44,2	53,6