

## ***Marriage and Death Statistics of the Sinnocks and Kin***

The following figures are based on data in the Sinnock and Kin database and include mortality statistics of 3741 people of known death dates and marriage statistics for 4209 people in more than 2000 known marriages. Death and marriage data become much more abundant and accurate in the early 1800's when the Civil Registration began in England and several states in the United States began collecting death and marriage statistics. Data for the figures are available in the Microsoft Excel 2010 file, *Sinnock.Vital Statistics.xls*. This Excel file contains the following 11 worksheets, each, perhaps, with several separate spreadsheets and graphs.

- *Data from the Database*
- *Death by Time Cohorts*
- *Death Ages by Time Cohorts*
- *Death-Age Frequency*
- *Death Ages of "Old Folk"*
- *Birth, Marriage, Death by Month*
- *Those Remembered*
- *Female Deaths*
- *Male Deaths*
- *Gender Deaths by Time Period*
- *Marriages*

The Excel file contains further analyses of birth, marriage, and death data for Sinnocks and their kin. To obtain the data in the spreadsheets, a report in RTF format was generated in Family Tree Maker for all individuals whose deaths or marriages were recorded in the Sinnock and Kin database in late 2012. This RTF file was imported to Microsoft Word, where I cleaned up formatting changes from program translations, deleted unreliable death dates mostly for people who I assumed had died 90 years after their birth, and pared all dates to years only for better numerical manipulation. This reduced table was then imported to Excel where marriage and death ages were calculated for all relevant individuals. The data were then sorted by age ranges and time periods for which statistical means, medians, and standard deviations were extracted in all combinations. Time periods for which statistics are calculated vary from 25 to 100 years, depending on the number of deaths in that period, or cohort; I tried to maintain at least 200 individuals in each time and age cohort. Marriage dates were further analyzed in Excel to eliminate marriage ages if I had previously estimated birth years from which those ages were calculated. I estimated many birth years based only on a wedding date and assumptions that

- people were about 25 years old at their first marriage, so were born 25 years before their wedding, birth years rounded to the nearest five years, up or down depending in part on assumption 2 that
- women were about 2 or 3 years younger than the men they married.

I also eliminated second and subsequent marriages of individuals on another graph to better observe ages at which men and women tend to marry in our family. Because statistical calculations and graphing are trivial in Excel, the data were easily extracted and graphed to produce the figures below.

Several observations can be made on the basis of these figures. The one I will mention before leaving you to your own interpretations is that the Sinnocks and their kin show very similar mortality and marriage statistics to most American families with northern European ancestors, especially those from southern England, as are the Sinnocks and many of their kin. Patterns shown by these data are fairly typical of the longevity and life expectancy of most Americans over the same period, though gems of insight about us, as a family, a nation, and a species, may await the curious in the summaries below and even more so in the Excel file. The figures included in this file are:

***Figure 1. Age at Death***

Histogram of all 3741 death ages. The abundance of childhood deaths is clear. If a child survived, death rates did not return to such high levels until the age of about 50 or so. Most died in their 70's and 80, a few into their 90's and fewer still into the 100's.

***Figure 2. Death by Age Cohort***

Smoothed histogram of the same data as figure 1, showing details for age cohorts of 0 (<1) 1-2, and 3-9, which indicates most of the peak of deaths under age of 10 in figure 1 and 2 are due to infant deaths.

***Figure 3. Life Expectancy and Longevity at Different Ages***

Line graphs of life expectancy (the age at which one of a given age is expected to die) and longevity (the number of years we can expect to live at each age) as a function of age. This figure clearly shows that as we grow older our life expectancy increases, but, of course, longevity decreases.

***Figure 4. No. of Deaths at Age (X)***

Smoothed histograms for the number of deaths in 10 year age groups (60's to 100's) for each of several historical periods from the 1850 to 2000 (after 2000 is not included because of insufficient data). This graph clearly shows the lengthening of life spans for older folk in the 20<sup>th</sup> century, especially its last half.

***Figure 5. % of Deaths at Age (X)***

Smoothed histograms of the same data as figure 4, but expressed as a percentage of total deaths rather than as the number of deaths. The same increase in life expectancy of older folks is evident.

***Figure 6. Median Age of Death for Men and Women***

Line graph of the median age of death of men and women. The cause of the dip in women's death ages in the 1800's is unknown. The current situation of women living longer than men seems to have switched in about 1900. Perhaps both trends are related to better birthing survival.

***Figure 7. Median Ages at First Marriage of Men and Women Over Time***

Smoothed histograms of the number of men and women's marriage ages in various time periods. The histograms are based only on ages obtained from other sources and include none based on my estimates of birth years. The difference of about 4 years between older grooms and younger brides in the 1500's declined to the current one or two years' difference, at the same time as the age of first marriage tended upward for both sexes, more so for women, especially in the last half of the 20<sup>th</sup> century.

***Figure 8. Median, Maximum, and Minimum Marriage Ages Over Time, All Marriages***

Range graph showing the median, maximum, and minimum ages of marriages in each time period. It is based on all marriages, including second, third, and even some fourth marriages as well as the first marriage as shown in Figure 7. Marriage ages based on estimated birth years are also included in this chart but not in Figure 7. Multiple marriages of single people account for most of the older ages.

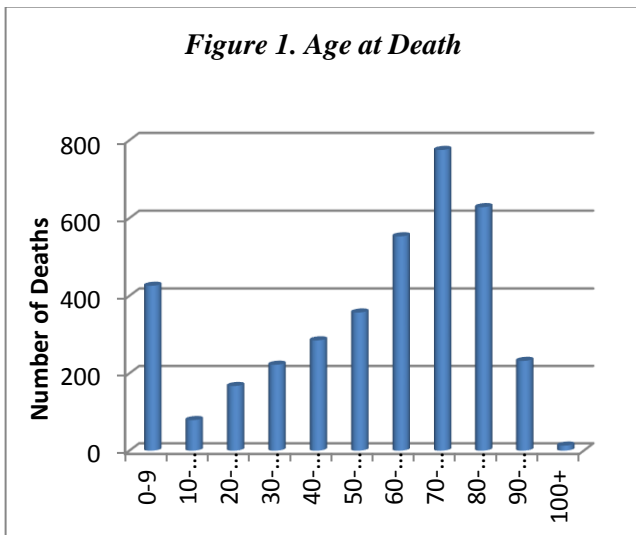
***Figure 9. Number of Marriages Each Day of the Month***

Range graph showing the mean plus and minus one standard deviation for the number of marriages occurring on each day of the month.

***Figure 10. Number of Marriages Each Month***

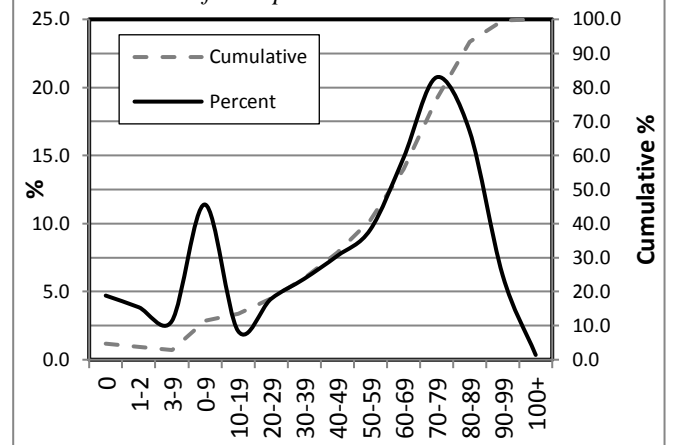
Range graph showing the mean plus and minus one standard deviation for the number of marriages occurring each month. The high number in December is in part due to many marriages on December 25, Christmas day, the most of any day of the year (see the upper range of the 25<sup>th</sup> in figure 9). August seems to be an unpopular month for marriages while the end of the year seems popular, especially November. The monthly variations seem to be significant, at least for these end members, indicating some cultural preferences, though I have run no statistical tests of significance.

**Figure 1. Age at Death**

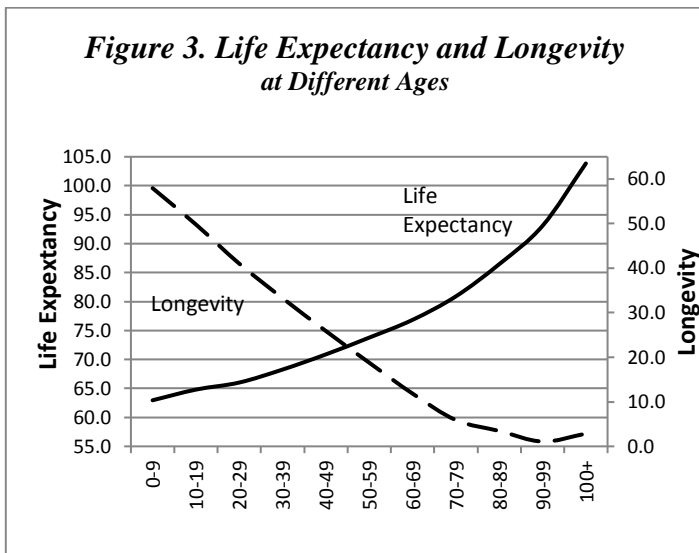


**Figure 2. Deaths by Age Cohorts**

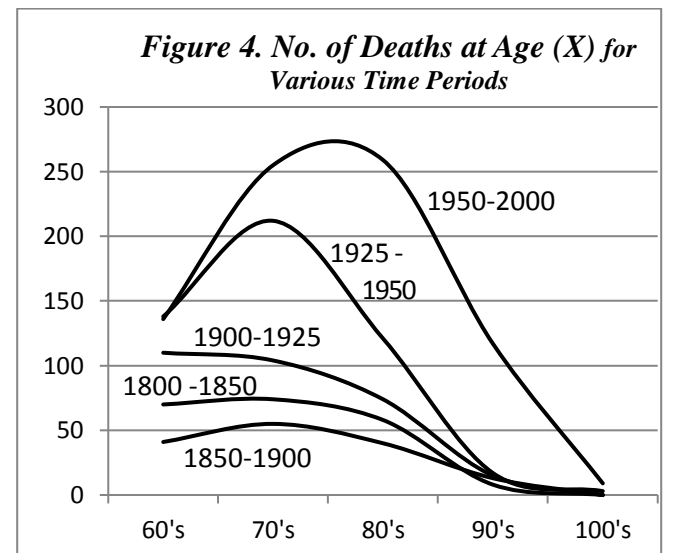
*note: the first 3 points sum to the 0-9 cohort*



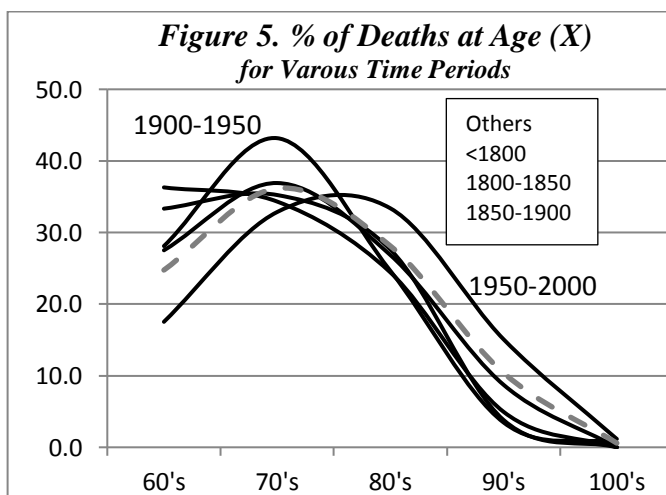
**Figure 3. Life Expectancy and Longevity at Different Ages**



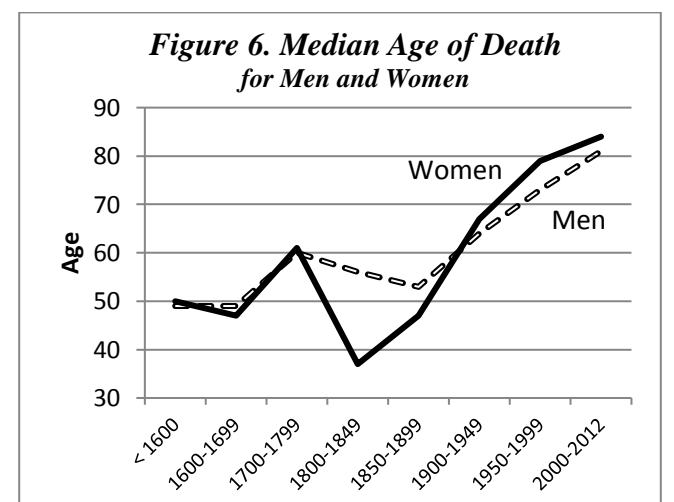
**Figure 4. No. of Deaths at Age (X) for Various Time Periods**



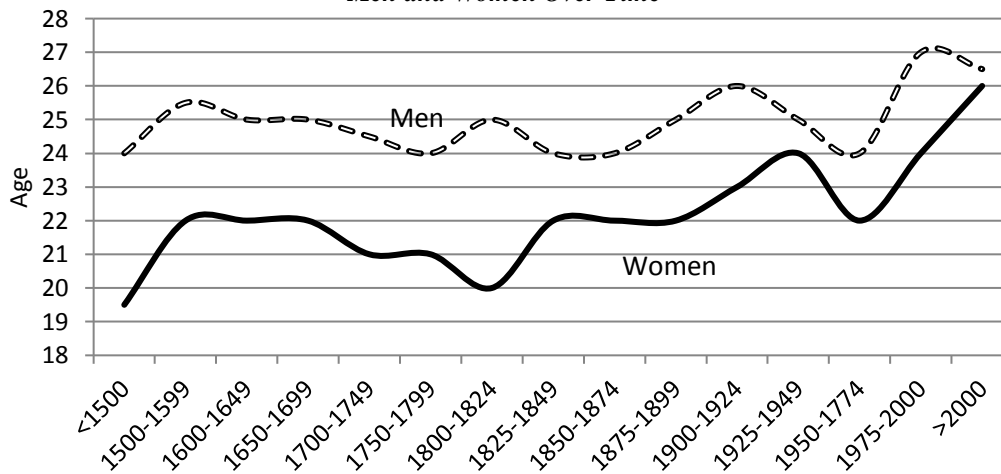
**Figure 5. % of Deaths at Age (X) for Various Time Periods**



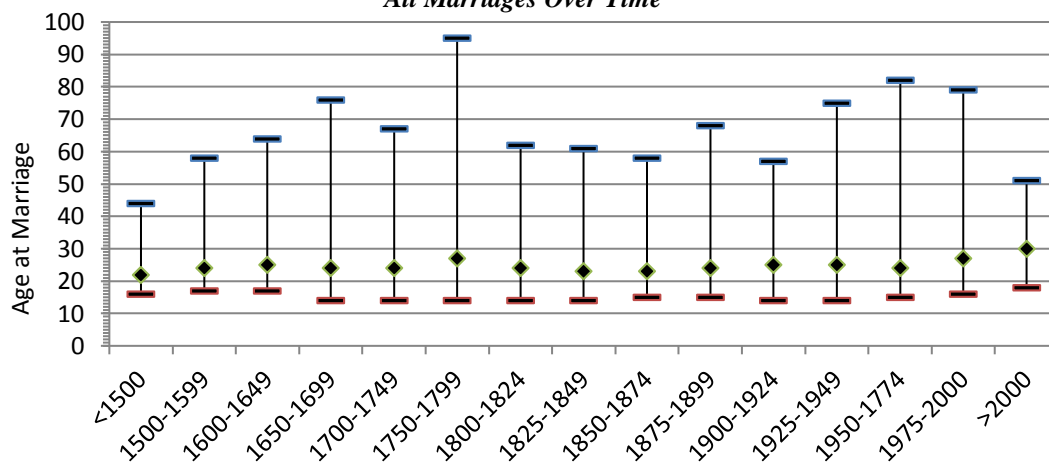
**Figure 6. Median Age of Death for Men and Women**



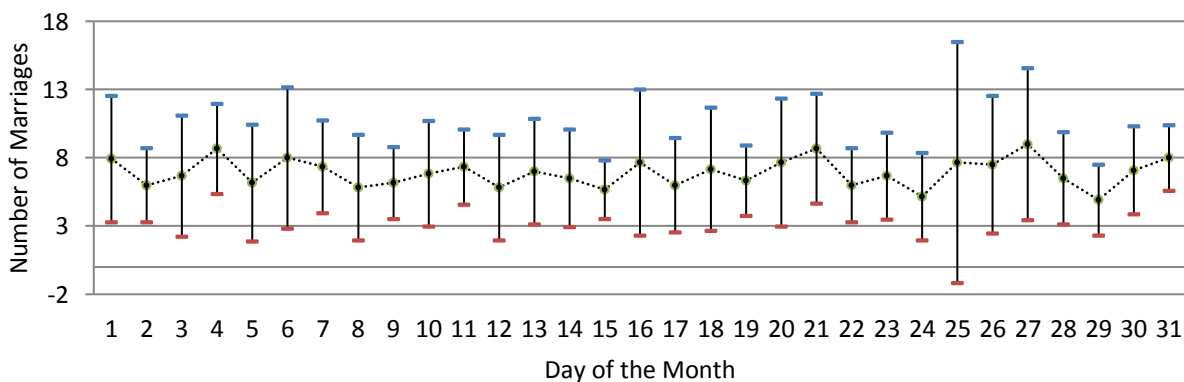
**Figure 7. Median Age at First Marriage  
Men and Women Over Time**



**Figure 8. Median, Maximum, and Minimum Marriage Ages  
All Marriages Over Time**



**Figure 9. Number of Marriages Each Day of the Month  
(Mean  $\pm 1\sigma$ )**



**Figure 10. Number of Marriages Each Month**  
(Mean  $\pm 1\sigma$ )

