

due to it. In France alone 30,000 died annually, and nearly a like number in the then Kingdom of Prussia. It was the common experience then as now (amongst the unvaccinated) that the disease was no respecter of persons—the high and the low, the rich and the poor, the suckling child and decrepit age, all the groups were called upon to offer victims to this moloch of disease. In all classes of society were found those scared, scarred or maimed for life as the result of it.

It is estimated that during this century only five out of every hundred persons went through life without being attacked by it. The estimated number of deaths in Europe from smallpox (Juncker) were 400,000, while the "Bills of Mortality" for London alone, from 1761 to 1800, show the deaths in that city from smallpox alone to have averaged each year 19,425, and according to Lettsom, most children in that city had the disease before the seventh year of life.

Many lengthy tables* could be given showing the deaths which happened yearly in the countries and cities of Europe during the latter portion of the 18th and early years of the 19th century before vaccination was introduced. As they can be found in any standard work upon the subject they will not be given here, suffice to say that their correctness is unquestioned.

The following data, however, is most interesting, as indicating the marked contrast of the ravages of smallpox in pre-vaccination periods when compared with those years after its introduction in various cities and countries. In studying these figures it must be remembered that vaccination was purely a voluntary matter in the years immediately following its introduction, and even when made compulsory some time must necessarily elapse before the majority had been vaccinated, hence must follow a gradual decrease in the death rates from smallpox.

Smallpox in Sweden.

In Sweden vaccination was made compulsory in 1816, but, as a result of voluntary vaccination before that date, it is found the average yearly death rate per million of the population for the decade 1802-1811 was 623, while in the next decade, 1812-1821, it fell to 133, as against a yearly average of 2,050, for the twenty-eight years immediately preceding vaccination.

Perhaps the most striking figures presented as showing the beneficial effects of vaccination are those of Sweden, as the figures are obtainable from three distinct periods, viz., pre-vaccination, permissive vaccination, and compulsory vaccination. The mortality in each case is per million lives:—

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|-----------------------------|------------|---------|--------|-----|----|--------|
| (a) Pre-vaccination | 1774-1810, | average | 2,045, | for | 28 | years. |
| (b) Permissive vaccination. | 1802-1816, | " | 480, | " | 15 | " |
| (c) Compulsory vaccination | 1817-1893, | " | 155, | " | 77 | " |

University of Prague Report.

Again, in official figures of the University of Prague for seven years preceding vaccination, viz., 1796-1802, out of an average population of 3,039,722, it is found that one-twelfth of all the deaths were due to

*Paper by Mr. John Senior, 1857.