

POPULATION IN DECLINE ST KILDA 1856-1891

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The evacuation of St Kilda in August 1930 marked the end of a small society which had occupied the principal island of Hirta for more than 2000 years. The causes of the collapse of the society have been variously suggested, but whilst there were many subsidiary or contributing features, a study of the official records, the civil registers from 1856 to 1891 and censuses of 1861 to 1891, points to one important undermining influence. This was tetanus infantum which caused the deaths of a majority of infants, particularly of males, for a period of at least 130 years.

St Kilda, an archipelago of four islands and several rock stacs, projects out of the North Atlantic, fifty miles west of the Outer Hebrides. It is sufficiently remote to have avoided the last ice sheet which covered Britain, and it has its own subspecies of wren and field mouse, and there was a house mouse, now extinct. The archipelago forms the remains of a long extinct volcano, and on all sides presents spectacular cliff faces to the sea except at Village Bay and in Glen Mor on Hirta. Even today landing is difficult other than in calm weather. The cliffs rise sheer from the water, up to 1200 feet, and provide on the islands and particularly on the stacs, nesting sites for gannets, fulmars, puffins, and other sea birds, making St Kilda the premier nesting site for sea birds in the eastern Atlantic. The birds and their eggs provided the community on the island with its principal source of food.

Apart from temporary incomers at different times, and usually for short periods, there was but one immigrant, a woman. The temporary incomers included the minister, the catechist, the teacher, the minister's housekeeper and the nurse.

Some emigration took place in 1851, when six people left for Australia, and again in 1856 when thirty-six emigrated, again to Australia. Apart from these, there appears from reconciliation of the registers and census data to have been no other emigration until the twentieth century.¹

With the above exceptions the society was a closed one. The sea-bird-eating propensity of the residents was shared only by the community in the parish of Ness in Lewis in the Hebrides, and this may have been one reason which discouraged potential immigrants.²

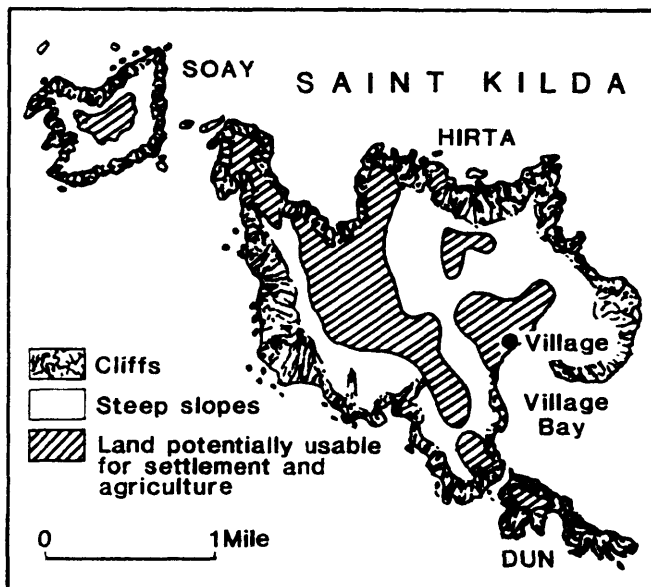
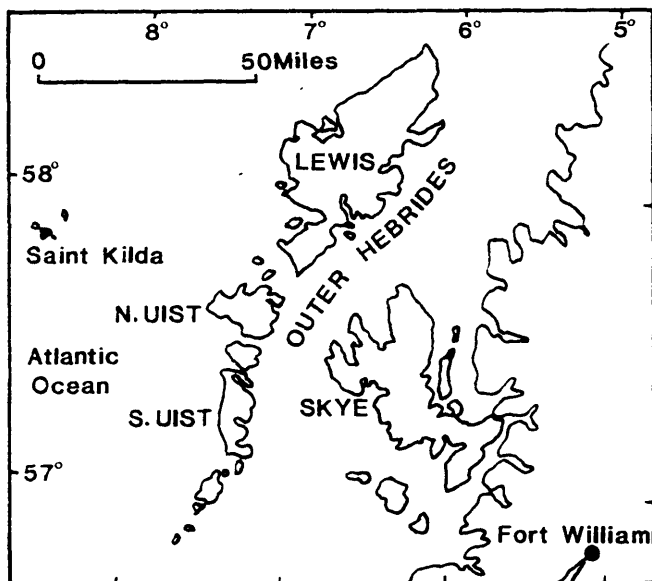
Communication with the mainland was by one boat a year, in summer, when the landowner's factor brought supplies, collected rent, and took away exports, principally feathers, down, tweed and fulmar oil. Rent was paid in kind. In later Victorian times tourist visits from steamers were a regular summer feature and source of income.

In the following survey, whilst it is not possible to disclose names, each figure for the period from 1856 to 1891 can be attributed to a specific person.

Table 1. Population of St Kilda³

Year	Authority	No. of families	Males	Females	Total
1697	Martin	27			C180
1730	Quoted in Maclean (following a smallpox epidemic)				C 30
1758	Macaulay		38	50	88
1764	Walker				92
1773	Buchan	30	—	—	—
1795	Macdonald (Agriculture in the Hebrides)				87
1799	Lord Brougham				100
1803	Sir G. S. Mackenzie				97
1810	Quoted in Maclean				100
1815	John Macculloch	20			103
1822	Rev. John Macdonald	20	51	57	108
1838	L. McLean				92
1841	Wilson	29			105
1851	Census	32	48	62	110
1861	Census	20	33	45	78
1866	Quoted in Maclean				77
1871	Census	19	27	44	71
1877	Seton	19	31	45	76
1881	Census	19	33	44	77
1884	Quoted in Maclean				77
1891	Census	18	32	39	71
1901	Census		38	39	77
1906	Quoted in Maclean				78
1910	Quoted in Maclean				78
1911	Census		40	40	80
1920	Quoted in Maclean				73
1921	Census		37	36	73
1928	Quoted in Maclean				37
1930	Quoted in Maclean		18	18	36

Note: The first census was held in Scotland in 1841, but St Kilda was omitted from it.



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II

The population of the island was as shown in Table 1.

The emigration in 1856 had a major effect on the society. The population declined from 110 to 78 and never again exceeded 80. Of the thirty-six emigrants who left for Australia, many died on the journey. Subsequently one emigrant returned to the island. News of the dangers to which the emigrants were exposed through illness probably inhibited further emigration.⁴

Statutory registration began in Scotland on 1 January 1855, but it was not until the factor's boat called at the island in the summer of 1856 that registration began there. The period under review starts with the beginning of registration in 1856 and ends in 1891.

The old parish register, which dates from 1830 and extends only to 1840, with a few odd entries thereafter, is of limited value but it is useful in identifying married couples and in family reconstitution. There are no other registers or census records.

Between 1856 and 1891 there were ninety-seven births, of which fifty-seven were male and forty were female. Unfortunately, of these, thirty-eight males and twenty-two females (sixty in all) died within the first twenty-seven days of life, leaving nineteen male and eighteen female survivors. The mortality rate for the male infants was 667 per 1000 live births and for the female infants 550 per 1000 live births, producing a combined rate of 619 per 1000 live births. Similar figures are found in the parish registers for the period from 1830 to 1840.

It should be noted that the male birth rate was 588 per 1000, being considerably in excess of the 510 to 520 per thousand normally expected. The figures however relate to only a small population.

Table 2. Causes of infant death 1856-1891

Stated cause	Male	Female	Total	Death between days
Unknown	11	11	22	4-22
Lockjaw	22	5	27	7-15
Tetanus	1	1	2	7-8
Convulsion	2	1	3	8-18
Cold	1	—	1	20
Colic	—	1	1	6
Consumption	—	1	1	27
Swelling	1	—	1	12
Pleurisy	—	2	2	6-10
Total	38	22	60	4-27

III

The causes of infant death shown in the registers are as in Table 2.

The cause of death of the infants was principally tetanus infantum or lockjaw generally believed to have been transmitted in the dressing of the umbilical wound. In this society, as in many others, the use of butter, as mentioned in the Bible, was not possible, as butter was not available. Oil from fulmars was in abundant supply, being collected from the young birds before they were killed for food. The oil was usually used in lamps and was also used to dress the umbilical wound. It is believed that the oil was kept by the midwife in a particular gannet's pouch (or stomach) which had been handed down for generations and that the oil, which kept being replenished, had been infected. This however cannot be confirmed. The subsequent application for dung, whilst a possible source of the original tetanus, was not considered a likely continuing source of the infection.⁵

In the registers, it is noted that in the earlier part of the period under review 'unknown' is more often used, and in the 1870s and 1880s lockjaw and tetanus are used. It would seem therefore that many of the 'unknowns' were tetanus. As tetanus also results in convulsion and lockjaw it is reasonable to assume that most of the deaths are attributable to tetanus.

The only other child deaths in the period were of one two-year old girl and one nine-year old girl.

There were no endemic diseases, and measles and other childhood diseases were unknown on the island. The population suffered from influenza each time a boat visited the island. The inhabitants, used to a clean atmosphere, had no resistance to the bacteria brought in by ships crews and passengers, and to which the visitors were immune. Such influenza presented only limited exposure, unlikely to have affected infants of only a few days old, if there were, indeed, any as young at the time of the visits, which were relatively few each year.⁶ The influenza was known as 'boat cold' or 'boat cough'.

Macaulay⁷ in 1758 mentions 'eight day sickness' (i.e. tetanus) affecting the children. It was also known in Ireland, and in Iceland in the Westmann Islands in the 1820s there was a very heavy incidence of death from the disease, overcome only by immigration.⁸ On 14 August 1891 the final case of infant death from tetanus occurred in St Kilda. Improved care of the umbilical wound resolved the problem.⁹

No reason can be attributed to the particular susceptibility of the male infant to tetanus.

Before leaving this particular aspect, in practical human terms one couple, who were married about the beginning of the period under review, had ten children. All died within two weeks of birth except one son. He, in his twenties, died from a throat infection. Other equally harrowing details are to be found in the registers.

IV

In any society, the ability of it to reproduce itself is essential if it is to survive. Having looked at the infant mortality on St Kilda, other features of demography, the reproduction rates, the composition of the adult population and marriage details will be reviewed over the period from 1856 to 1891.

Taking census data, the average number of women of child bearing age (fifteen to forty-nine years of age) was 22.7. Female births in the period were forty, so that the net female reproduction rate was 1.8 ($40 \div 22.7$). This is well above the essential one that is necessary to sustain replacement of a population.

However if the twenty-two neo-natal deaths are deducted from the forty births, the eighteen survivors produce an effective reproduction rate of 0.793 ($18 \div 22.7$) female births per woman, a much more insecure base from which to ensure replacement of the population.

From Table 1 — Population, the number of males was consistently below the number of females, averaging 74.5 per 100 females in the period under review.

The increased infant mortality of the males, in addition to their increased accident rate causing premature death, and naturally greater longevity of the females, contributed to the sexual imbalance. Whilst there were only two deaths resulting from the bird-catching operations in the period, these always involved boys or men. The procedure involved lowering a boy or man over a cliff on a long rope to give him access to the nesting sites on the cliff ledges. Ropes originally were made of horse hair and leather, with a leather covering to prevent chafing on the rocks. Subsequently manilla fibre ropes were used. On occasion ropes broke and the suspended man or boy fell to his death.

On 3 April 1863, some islanders, who rarely sailed to Scotland, set sail for the Hebrides. The boat never reached its destination and its cargo of tweed and other items of export, together with seven men and one married woman, were lost. The

men were mainly in their twenties, four being unmarried. One of the deaths was not registered on the island.

Correction of the sexual imbalance could have been achieved by polygamy or immigration, and on the eradication of tetanus in 1891 it was achieved by the time of the 1901 census.

The details showing the marital state of the community at the censuses are given in Tables 3 and 4.

Table 3. Marital state of all adults fifteen years of age and above

Census Year	Males		Females	
	Married	Unmarried or widowed	Married	Unmarried or widowed
1861	13	15	13	22
1871	15	7	15	23
1881	16	7	16	22
1891	14	7	14	18

Table 4. Marital state of adults

Census year	Males 19-59 yrs unmarried or widowed	Females 15-49 yrs unmarried or widowed	Females 15-49 yrs married
1861	10	18	8
1871	7	21	7
1881	3	16	6
1891	1	9	8

Note: In 1861 shortly after the census, there were four marriages.

The definition of a man of marriageable age is one between nineteen years and fifty-nine years old, as the youngest male married at nineteen and the oldest male married at fifty-nine and subsequently fathered a daughter.

The definition of a woman of child bearing age is one between fifteen years old and forty-nine years old, the youngest mother during the period was eighteen and the oldest was forty-eight.

It is sad to note that by 1891 nine women were unmarried and within the child bearing period of their lives and there was only one eligible unmarried male. He was the minister, one of the incomers and not part of the native community.

The marriage details of all adults during the period are given in Tables 5 and 6.

Table 5. Marriages of males

Years	Marriages	Age at first marriage	
1856-1891	14	Minimum	19 years
		Maximum	31 years
		Mean	24.5 years
		Median	25 years
		Mode	21, 25, 26 and 27 years

Years	Remarriages	Age on remarriage	
1856-1891	10	Minimum	27 years
		Maximum	59 years
		Mean	38 years
		Median	36.5 years
		Mode	43 years

Note: Two of the men remarried twice.

Table 6. Marriages of females

Years	Marriages	Age at first marriage	
1856-1891	22	Minimum	17 years
		Maximum	37 years
		Mean	26.3 years
		Median	24 years
		Mode	24 years

Years	Remarriages	Age on remarriage
1856-1891	2	Both at 27 years

Clegg¹⁰ asserts that the 'frequency' of marriage in St Kilda declined in the late nineteenth century. This is understood when over the period from 1856 to 1891 the number of males eligible to marry had declined to one. During the period from 1830 to 1840 there were twenty marriages, and during the period from 1856 to 1891 there were twenty-four marriages. The population however was smaller.

The mean age of 24.5 years for a male first marriage cannot at present be related to other similar communities. Unpublished surveys in Scotland would appear to indicate that this was a low age however.

Remarriage, with the relatively large number of unmarried women available was almost as regular an occurrence as marriage and resulted from some of the wives dying in childbirth. The registers show seven such cases, the child surviving in one. An analysis of the causes of death of the mothers is as shown in Table 7.

Table 7. Causes of death of mothers in childbirth

Date	Cause of death	Date & cause of death of child	Age of child	
4.6.63	Tetanus	16.5.63	Tetanus	7 days
7.7.67	Lockjaw	30.6.67	Lockjaw	8 days
13.10.69	Unknown	16.10.69	Unknown	7 days
20.10.71	Unknown	Child survived		
18.8.77	Unknown	5.9.77	Consumption	27 days
8.10.78	Quinsy	2.10.78	Lockjaw	10 days
3.6.80	Uiliary fever (?)	4.6.80	Convulsion	8 days

Note: There were in addition two deaths of young married women both shown as unknown, which may have been in childbirth, but as there are no relative births, these may have been stillbirths, or from other causes, altogether.

As already indicated, during the 1856 to 1891 period there were ninety-seven live births. Whether a death rate of 7.2 per cent of mothers is high or not is not known, but it appears that tetanus was taking its toll among the mothers also. The infection from the dressing of the child's umbilical wound could easily have been transferred to the mother in the prevailing insanitary conditions. For tetanus to infect a patient, an open wound on which the bacteria can thrive is all that is required, and this is a regular feature in childbirth.

The numbers of unmarried women and the incidence of remarriage reflect the demographic crisis which the society was experiencing. The birth rate was at a high level as is shown below.

From the registers the number of women years in child bearing matrimony has been calculated for the period concerned. There are thirty-seven marriages which are wholly or partly involved and one of these, childless, which lasted twelve years, but in which the couple were separated after some months, has been omitted. The results show there were 276 fecund married years, which produced ninety-four births, of which thirty-seven survived. This shows, over the period, a frequency of births of one every 2.93 years and a survivor frequency of one every 7.263 years. These figures would produce a rate of 340 births per 1000 married women of child bearing age, 137 survivors per 1000 married women of child bearing age and including illegitimacies, 125 births per 1000 women of child bearing age and 51.6 survivors per 1000 women of child bearing age. There were three illegitimate births.

V

In conclusion, the high birth rate could not by itself counter the infant mortality on the island. With the improved position on the eradication of tetanus in 1891, the crude birth rate dropped from 39.4 per 1000 for the five years from 1889 to 1893 to 25.9 per 1000 for the five years from 1899 to 1903 and the respective crude death rates were 42.3 and 10.4 per 1000. Had there been less imbalance between the sexes in the community, so that half the women of child bearing age were not without husbands, a more stable rate of births might have resulted.

It is also interesting to note that, on the eradication of tetanus, the imbalance of the population disappeared.

The main root of the demographic crisis, however, can be traced back to that period between 18 November 1862 and 11 January 1872 when sixteen male infants were born and not one survived. By the time of the 1891 census, when there were nine women of child bearing age who were without spouses, these male infants would have been between twenty and twenty-nine years old, and the society on the island would have faced the twentieth century in a much stronger condition.

'Last night at 10.30, the child after six days' intense suffering departed this life. Every one expressed great wonder how it lived so long after being seized with illness, as they generally succumb at the end of a week after they are born. This one was thirteen days except one and a half hours. It had a frequent cry since it was born; but the first sign of its being dangerously ill was at the end of a week, when it ceased to suck the breast, but still sucked the bottle. The following day " thuit na gialan" (the jaws fell), when all hope of its recovery was given up. From that time till its death it occasionally took a little milk in a spoon or out of the bottle. The last two days a little wine in water was given once or twice. It very often yawned and sometimes looked hard at you. It was pitiful to see the poor little thing in the pangs of death. May God prepare us all for the same end.' George Smith, schoolmaster, St Kilda, 27 December 1886."

NOTES

1. T. Steel, **Life and death of St Kilda**, 1965, p.103;
C. Maclean, **Island on the edge of the world**, 1972, p.125.
2. Steel, p.112.
3. G. Seton, **St Kilda past and present**, 1878, p.143;
Maclean, p.122, (reprinted by James Thin, 1980).
4. Steel, p. 25-7, Maclean, p.103.
5. Steel, p.110, Maclean, p.103.
6. Seton, p.228 **et seq.**
7. Rev. Macaulay, **History of St Kilda**, 1764, p.199, (reprinted by James Thin, 1974).
8. Seton, p.214-5.
9. Steel, p.112.
10. E. J. Clegg, 'Population changes in St Kilda': **Journal of biosocial science**, 1977.
11. Steel, p.99.

Bibliography

- 1) St Kilda: Part of South Harris Parish, Inverness-shire,
Parish Register — 4/7/1830 — 1/1/1840 Baptisms
20/8/1830 — ? 1840 Marriages
18/7/1830 — 10/9/1840 Deaths
- 2) Registers of Births, Marriages and Deaths, Registration District 111⁴
Inverness-shire — 20/4/1856 — 1892 Births
24/10/1856 — 1892 Deaths
15/7/1861 — 1892 Marriages
- 3) Census Records for 1851, 1861, 1871, 1881, 1891, 1901.
- 4) Publications detailed above under 'notes'.