Demographic Transition in Sri Lanka

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Introduction

It has been a customary practice of students of the population history of Europe and the countries settled by the Europeans to divide the demographic evolution of those lands into various stages (see Landry, 1934; Thompson, 1929; Blacker, 1947). However, the 'modern demographic transition theory was born almost in mature form in a paper written by Frank Notestein in 1945, (Caldwell, 1976, p. 323). In his essay, Notestein has made an attempt to explain how the variables of vital transition change over time from a high level to a low level (Notestein, 1945). Until the middle of the 17th century, called the pre-transitional period, both crude birth rate and crude death rate in the European countries remained at a high level between 30 and 40 per thousand. The heavily fluctuated death rates during this period have been attributed to disease, hunger and war. At the same time, since survival was in doubt, parents tended to have many children hoping that at least some of them will live to take care of them (parents) in their old age. Eventually, the death rates began to decline. According to Notestein, 'the whole process of modernization in Europe and Europe overseas brought rising levels of living, new controls over disease and reduced mortality' (Notestein, 1945, p. 39). However, fertility was much less responsive to the process of modernization and remained at a high level for a few more decades, resulting in rapid population growth. As Notestein says, 'the reasons why fertility failed to decline with mortality are clear enough in general terms. Any society having to face the heavy mortality characteristic of the pre-modern era must have high fertility to survive. All such societies are therefore ingeniously arranged to obtain the required births. Their religious doctrines, moral codes, laws, education, community customs, marriage habits and family organizations are all formed towards maintaining high fertiliy" (Notestein, 1945, p. 39). Eventually, in the latter half of the 19th century, fertility also began to decline, thus slowing down the rate of population growth. The decline in fertility was due to many factors like 'growing individualism' and rising levels of population aspirations developed in an urban industrial society. 'In short, under the impact of urban life the social aim of perpetuating the family gave way progressively to that of promoting the health, education and material welfare of the individual child' (Notestein, 1945, p. 40). In the first half of the 20th century, a new phase in demographic evolution became apparent. Both the crude birth rate and crude death rate reached a low level and were relatively stable. The rate of natural increase in population was low and the chief determinant of the size of population was crude birth rate. Most of the countries in Europe and countries like the USA, Canada, Australia and New Zealand have reached this stage.

This transformation in pupulation has been termed "the demographic transition". 'We recognize four connected phases in this sequence. In the first, or high stationary phase, both the birth and death rates are high... the second, or early expanding phase, is characterised by a continuing high birth rate but a fall in death rates... the third, or late expanding phase, is characterised by a stabilization of the death rate at a low level and a reduction in the birth rate... the fourth, or low stationary phase, is a period when birth and death rates have stabilized at a low level; consequently, the population is stationary' (Haggett, 1972, pp. 159-60; see also Fig. 1).

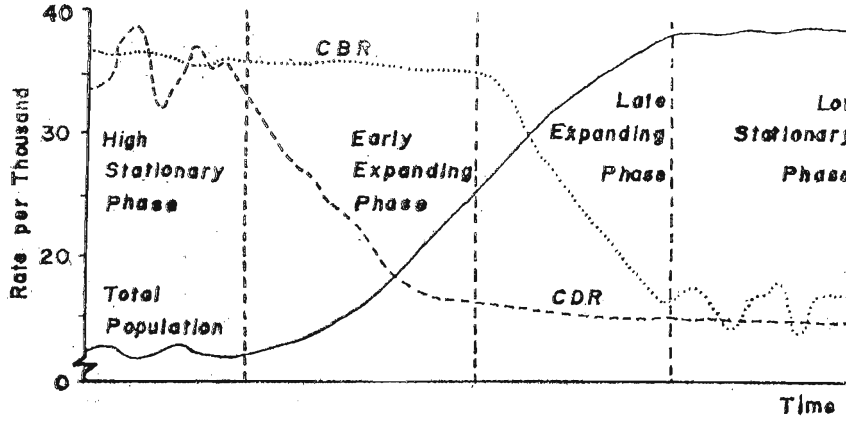

Fig. 1 The Demographic Transition Model *(after Hoggett)*

The theory has received a varying response from an audience consisting of students from a wide range of disciplines. Some of them have criticized the theory severely. Most of the writers, however, agree with the fact that 'our interpretation of past population movements and our expectations about future trends rest primarily on a body of observations and explanations known as 'demographic transition theory' (Caldwell, 1976, p. 321). In this essay, an attempt will be made to examine the demographic evolution of Sri Lanka within the framework of the theory.

The Case of Sri Lanka

Sri Lanka is an island of 65,610km^2 located south of the Indian sub-continent. According to the Census of Population 1981, there were 14.8 million people in the island and the population was growing at a rate of 1.7 per cent per annum. As is the case of many developing countries the economy of the island depends considerably on the export trade of a few primary agricultural products. Three major crops (tea, rubber and coconut) accounted for about 52 per cent of the total export earnings in 1981 (Central Bank, 1981). Rice, however, is the single crop with the largest extent under cultivation. It is also the major crop in domestic agriculture and successive governments have made self-sufficiency in rice production a major goal of state policy (see Agricultural Plan 1958 (1959); The Ten Year Plan 1959–69 (1959); Agricultural Development Proposals 1966–70 (1966); The Five Year Plan 1972–76 (1971). However, self-sufficiency in rice production is yet to come and a recent study by the present author revealed that in the late 1970s farmers in Sri Lanka were able to produce 85 per cent of the island's requirements of rice (Dangalle, 1980). The manufacturing industry, still in its infancy, accounts for only a bare 14 per cent of the Gross National Product (Central Bank, 1981).

Sri Lanka has often been cited as a veritable demographic laboratory due largely to a dramatic decline in the crude death rate which occurred in just one year (1946–47), an impressive performance in all demographic history (see,

Taueber, 1949; Davis, 1956; Fredericksen, 1960). More recently, however, demographers and others have begun to focus their attention more on the subsequent behaviour of birth rate (Fredericksen, 1966; Wright, 1968; 1970; Jayawardene, 1970; Fernando, 1972; 1975; 1976). This article may be considered as an attempt to summarize the available literature on both mortality and fertility behaviour in Sri Lanka during the past one hundred years.

Fig. 2 shows the crude birth rate and crude death rate in Sri Lanka since 1874. Apparently, the behaviour of these rates up to the 1920s portray a situation that has been described as the high stationary phase of the demographic evolution. In other words, the variables of natural increase in the population of the island during this period displayed the characteristics which are commonly seen in pre-transitional societies in other parts of the world.

The High Stationary Phase

As can be seen from Fig. 2 the crude death rate in Sri Lanka showed a highly fluctuating but increasing trend during this period. As expected, the crude death rate was accompanied by a crude birth rate of a similar pattern. As was/is the case in almost all pre-transitional societies, the size of the population in Sri Lanka during this period was determined mainly by the behaviour of mortality. Due to poor sanitation and health conditions, low levels of living and non-availability of an efficient medical service network, mortality remained at a high level. Leonard Woolf, the civil servant-writer of the colonial Ceylon in his classic—*The Village In The Jungle* has portrayed very vividly the life of the poverty-stricken peasantry of Sri Lanka during that period. Woolf wrote: 'the villagers lived upon debt, and their debts were the main topic of their conversation. A kurakkan crop, from two to four acres of chena, would be sufficient to support a family for a year. But no one, not even the headman, ever enjoyed the full crop which he had reaped. At the time of reaping, a band of strangers from the little town of Kamburupitiya, thirty miles away, would come into the village. . .and the strangers left the village, their carts loaded with pumpkins, sacks of grain and. . .' [Woolf, 1913 (1974 ed) pp. 16-17]. To quote him again: 'The year of the great rains and rice and plenty was followed by a year of scarcity and sickness. For four months, from June to October, the sun beat down from a cloudless sky. The great wind from the southwest failed at last, but even then the rain did not come, and the withering heat lay still and heavy over the jungle. The little puddles thick with mud in the tank, which supplied the village with water, dried up, and the women had to go daily, four miles to fetch water from an abandoned tank in the jungle. . . Then, when it was too late to save the crops, the rains came, and with them sickness. Want had already begun to be felt by bodies weakened by the long drought, and fever and dysentery swept over the country' (Woolf, 1913 pp. 135-136).

The state of the medical services in a large part of the island during this period, as shown by Meegama, was poor and unfortunate and those members of the legislature who represented the local community were continuously agitating against the colonial government's negligence and discrimination (Meegama, 1969).

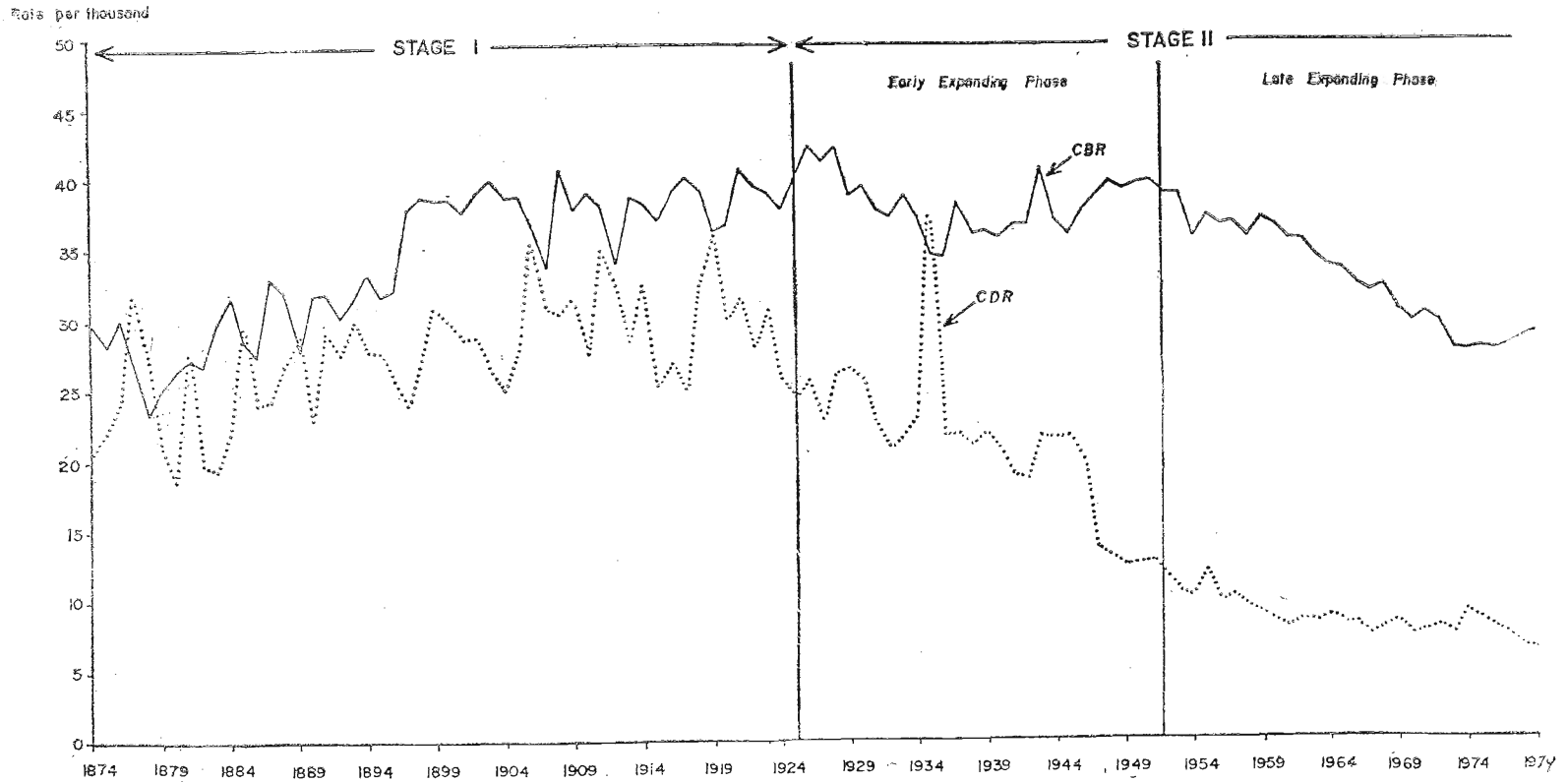

Fig. 2 Sri Lanka, Crude Birth Rate and Crude Death Rate.

Thus, mortality remained at a high level. Also, as can be seen from Fig. 2, it fluctuated heavily. These fluctuations reflected the diseases and natural disasters which were common in this period. 'Prior to 1900 cholera was responsible for a significant number of deaths. For instance, in 1891, as many as 39.22 deaths per thousand were caused by cholera alone. Typhoid continued to be a significant killer till some time later and in 1901 caused as much as 19.61 deaths per thousand' (Sandaratne, 1975, p. 160).

As mentioned earlier, fertility also remained at a high level. High fertility in pre-transitional societies has been a popular topic among demographers and they have given various explanations for this behaviour. According to some of them, as has been already mentioned, children in these societies are considered as some sort of social insurance against the old age of parents. Even in modern Sri Lanka, it is not strange to see parents depending heavily on their children.

Children satisfy their parents in many other ways. 'They increase the size of the security system and of the co-operating group in less serious situations; they increase the number of close allies in the political contest in the traditional political system in which success is due to the ability to tap more or better community resources; they increase the number of relatives who can attend family ceremonies and hence magnify one's social importance and sheer consumption pleasure' (Caldwell, 1976, p. 340).

The decline in fertility in transitional societies has been largely attributed to the increasing roles played by women in economic activities and social life. On the contrary, women in pre-transitional societies were hardly involved in the decision-making; instead, they played a subordinate role. As Wijesekere observes: 'in the matter of sexual gratification the wife is dependant entirely on the will and pleasure of the husband. The obvious result is large families' (Wijesekere, 1949, p. 107).

Although large families were considered a societal necessity, children's survival was in doubt due to many reasons. Thus, parents were induced to have many children, hoping at least one of them will survive to adulthood.

As a result of the interaction of high rates of birth and death, population remained at a low level of equilibrium. The natural increase in population with such a highly fluctuating pattern never exceeded an annual rate of 1.5 per cent. On the contrary, there were a few years like 1877, 1878, 1889 and 1919, when an absolute decline in population was recorded.

Phase II of the Transition

Some writers on the demography of Sri Lanka look upon the year 1946 as the beginning of the second phase of the demographic evolution of the island (see Sandaratne, 1975). The impressive decline in the crude death rate by 29.2 per cent from 19.8 per thousand in 1946 to 14.0 per thousand in the following year appears to be the deciding factor behind the selection. As can be seen from Fig. 2, however, the onset of the decline in crude death rate of the island began very much earlier. According to Meegama, 'the fall in the death rate between 1946 and 1947 obscures the fact that between 1937 and 1942 death rates had already fallen substantially... to levels not attained before' (Meegama, 1967, p. 226). He wrote: 'the demographers who restrict their

attention to the decline after 1946 usually overlook the earlier decline because of the rise in the death rate once again in the years 1943-46' (Meegama, 1967, p. 226). In a paper on the effects of malaria control on mortality levels in the island, Gray says that 'the death rate declined gradually prior to 1945, with the exception of 1935, which was a year of peak mortality associated with a massive malaria epidemic' (Gray, 1974, p. 205). Participating in the debate on the effects of malaria control on the island's mortality levels, Newman also identified the decline in crude death rate prior to 1945 (Newman, 1969). Placement of the onset of declining death rates well before the commencement of World War 2 may shed new light on the debate of the effects of the malaria eradication campaign on mortality in Sri Lanka.

According to Meegama the decline in crude death rate in the island began in the late 1930s and it was mainly due to the work carried out by the Medical Department (Meegama, 1967). However, Fredericksen observed that'... the death rate (all causes) of Ceylon had been displaying a downward trend at least since 1905' (Fredericksen, 1960, p. 865). Nevertheless, it is apparent from Fig. 3 that the crude death rate did not show any definite trend of decline as such, before World War 1. On the other hand, however, it did show a declining trend well before the 1930s.

As Fig. 3 shows, the crude death rate in Sri Lanka had been declining since the early 1920s. It also shows that the crude birth rate remained at a high level during this period. As a result, the rate of natural increase in population showed an upward trend. In the early 1950s, however, the crude birth rate also began to show signs of decline and this enables us to divide phase 2 of the demographic transition in Sri Lanka into two sub-periods, viz. the Early Expanding Phase and the Late Expanding Phase.

Early Expanding Phase 1925-early 1950s

During this period the crude death rate in Sri Lanka displayed a definite trend of decline. Registering a fall of 51.2 per cent it decreased from 24.2 per thousand in 1925 to 11.8 per thousand in 1952. However, apart from minor fluctuations, there was hardly any decline in the crude birth rate. The overall picture therefore, was one of steadily declining crude death rate, with crude birth rate remaining more or less static at a high level.

The result was a rapid increase in population. Within this short period, the total population in Sri Lanka nearly doubled from 4.8 million in 1925 to 8.0 million by 1952. Between the 1740s and 1880, England and Wales also experienced such a situation. During this period the population in England and Wales rose from 6 million to 25 million: a fourfold increase (Hornby and Jones, 1980). However, the annual rate of increase was much greater in the case of Sri Lanka, being nearly 2 per cent compared to that of 1 per cent in England and Wales. Rapid growth of population within a very short period due to the widening gap between vital rates has been the experience of many other Asian countries like the Philippines and Thailand (see United Nations, 1973; United Nations, 1978; Arnold, Retherford and Wanglee, 1977). Thus, although there is a similarity between developed and developing countries in terms of the behavioural pattern of vital rates, the fall in the death rate was much quicker and the natural increase in population was more rapid in the developing countries than in developed countries.

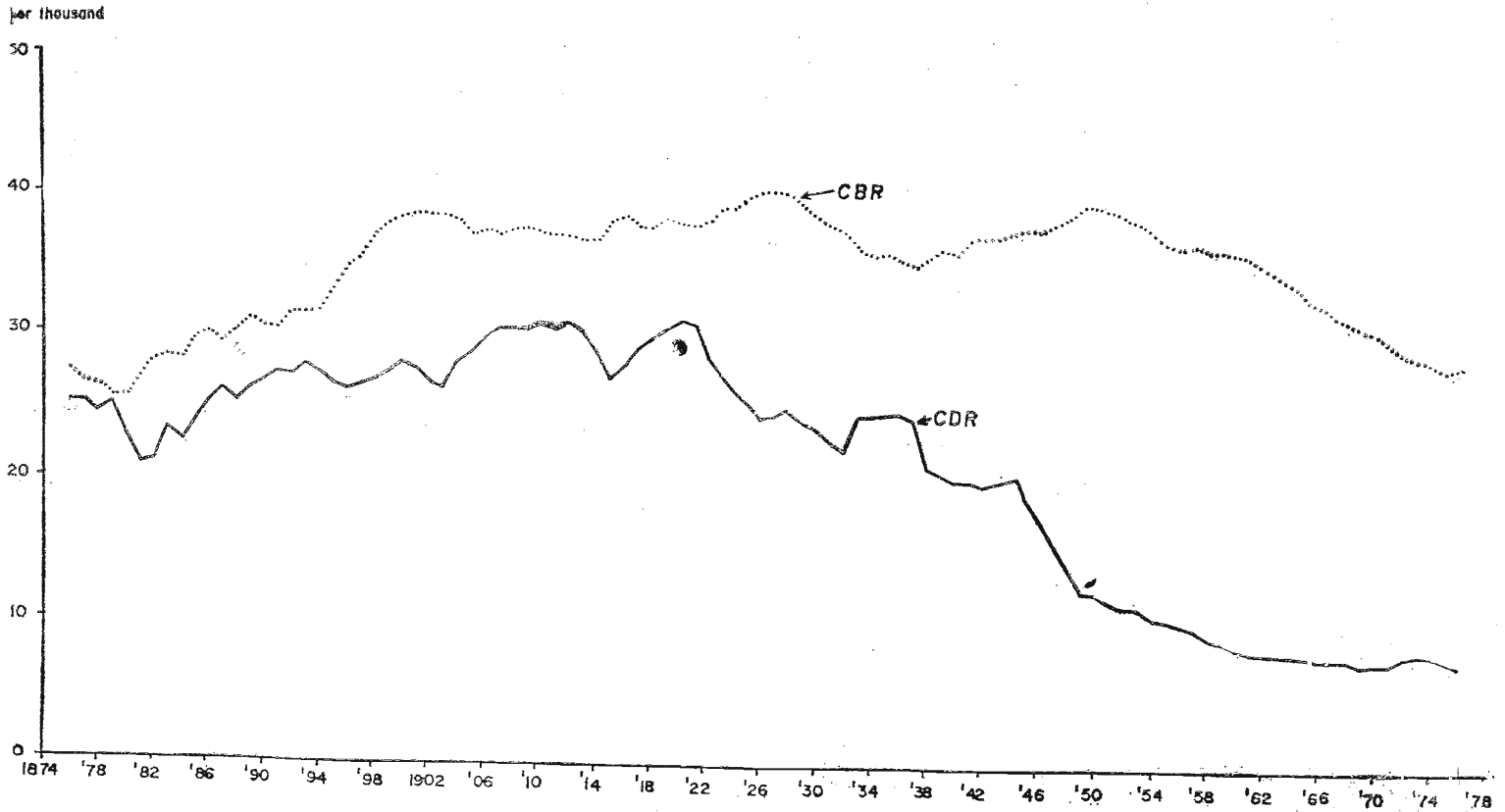

Fig. 3 Sri Lanka, Crude Birth Rate and Crude Death Rate - 5 Year Moving Averages 1874 - 1978.

It is apparent from Fig. 2, that during this phase the deciding factor of the size of population in the island was the declining death rate. As has already been mentioned, however, the rapid decline in crude death rate that took place in the year 1946-47 has overshadowed the decline in the previous period. As a result, most writers on mortality trends in Sri Lanka have focused their attention only on the post-1946 period (see Newman, 1969; 1970; Gray, 1974) thus leaving the decline in crude death rate in the pre-1946 period largely unexplained. According to one writer, however, the decline in crude death rate during this period was mainly due to the improvements in public health services and dietary conditions (Fredericksen, 1961).

Emphasizing the work of the Medical Department in the late 1930s Meegama wrote:..."the chain of events leading to a change...was set into being by the constitutional reforms of 1931, under which self-government in domestic affairs was granted to the colony...Thus in domestic affairs the power of policy making was transferred from the colonial bureaucracy to men who were held to account by the mass of the people. Governmental policies which earlier had led to a large regional bias because of being geared towards the satisfaction of the interests of the planters and other privileged sections of the community, had now to face electoral pressures from all classes and parts of the country... These developments were felt on a major scale in the field of medical policy only in the 1930s...." (Meegama, 1969, p. 291).

Although the crude death rate in Sri Lanka was declining since the mid-1920s, the effects of malaria eradication in the late 1940s, on mortality levels cannot be overlooked. The 29.3 per cent decline in the crude death rate in the year 1946-47 has, however, led many writers to inflate the effects of malaria eradication on mortality. Cullumbine (1950), Abhayaratne (1950), Newman (1965; 1969; 1971) and the Department of Census and Statistics of Sri Lanka (1974) regard malaria eradication as the major factor responsible for the post-war decline in mortality in the island. According to Newman, '4.2 points (or 41.6 per cent) of the fall in average CDR from 1930-45 to 1946-60 could be attributed to...the effect of malaria eradication, a conclusion closely in accord with that reached by Coale and Hoover' (Newman, 1969, p. 285).

Fredericksen, however, completely discarded the view that the post-war decline in the crude death rate in Sri Lanka was due to malaria control. To quote Fredericksen,...the dramatic post-war decline in the death rate in Ceylon may have seemed to coincide in time with the extension of the residual spraying of insecticides. But there was no such coincidence in place between the reduction in mortality and the extension of malaria control' (Fredericksen, 1970, p. 111). As he points out, only about half of the total population of Sri Lanka at that time lived in the malaria-stricken areas and was protected by DDT spraying. Furthermore, at the time DDT spraying was being introduced, only about half of the reduction in the number of deaths took place in the malarial area. If Newman's view that 42 per cent of the post-war decline in crude death rate in Sri Lanka, was due to malaria eradication is accepted, we are led to believe that all or most of the reduction in mortality in the malarial areas were due to DDT spraying (Fredericksen, 1970). Even the selection of the year 1946-7 for a discussion of the fall in mortality has been criticized by Fredericksen. 'A semi-logarithmic plot of the death rates for the quarters of the years since the great drought in 1935, through 1957, indicate that a fairly constant rate of decline in the quarterly death rates, with a wartime interruption

of the downtrend and a post-war return to the pre-war downtrend. It seems the wartime rise in mortality, rather than post-war decline, may have been the notable event' (Fredericksen, 1961, p. 661).

Another critic of Newman's hypothesis is Meegama. His criticism was mainly aimed at Newman's regression model which was used to detect the relationship between crude death rate and prevalence of malaria. Newman's regression model can be re-written simply as follows:

where, $Y = a + bx$

Y = the difference between the average crude rate of natural increase in 1930-45 and that in 1946-60 in each district

x = index of malaria prevalence in the district before eradication

a = index of the autonomous decline in mortality due to factors other than malaria. It was assumed that 'a' was the same for all districts.

According to Meegama, 'the difficulty with Newman's regression model is that it is based on an erroneous assumption which makes 'a', the autonomous rise in the CRNI, to be equal for each district, for this ignores the wide variation in the levels of the health services between each district before 1945 and the different effects which would have had on their mortality levels' (Meegama, 1967, p. 209). As Meegama says, improvements in public health services played a vital role in the reduction of mortality in the post-war period.

As we have seen, much has been written on the decline in crude death rate in a single year. In fact, a question may be raised of the rationality in the selection of one year for such an analysis. As mentioned earlier, the fall in the crude death rate was already taking place in the mid-1920s. As Fredericksen correctly pointed out, attention must be focused not only on the sudden decline in death rate, but also on the sporadic uprisings in the declining death rate. It is true that the crude death rate fell by 29.2 per cent from 19.8 per thousand in 1946 to 14.0 per thousand in 1947. At the same time, however, it should be noted that the death rate had risen to a high level by 1946 from a relatively low level in the pre-1946 period.

It may be seen from Fig. 3 that the death rate in Sri Lanka had been declining well before the World War 2 period. Improvements in public health services, sanitation and the level of living accounted for that decline. In the course of the decline the death rate rose mainly on two occasions. The rise in 1935 was caused by a disastrous drought, associated with an acute food shortage. The second rise took place during the World War 2 period. Then, it was followed by the malaria epidemic. The massive campaign of DDT spraying nearly eradicated malaria and brought the crude death rate onto the declining path again.

During the early expanding phase, the crude birth rate did not follow the declining crude death rate; instead, it remained at a high level with minor fluctuations. An early expanding phase, with a high birth rate and a rapidly declining death rate is common to all less developed countries which have experienced a high rate of mortality in the immediate past.

Late Expanding Phase

As shown in the demographic transition model, declining birth rate is the major characteristic of the late expanding period. The crude death rate in this period, on the other hand, shows signs of stabilization, at a low level. Hence, the deciding factor of the size of population in this period, in contrast to the previous period, is the birth rate. This typical pattern of behaviour of the vital rates, however, cannot always be identified even among the countries in the West. Hornby and Jones, for instance, describing stage 3 of the demographic evolution in England and Wales, noted that 'death rates fell steeply for much of the period' (Hornby and Jones, 1980, p. 57). It is apparent from Fig. 3, which shows 5-year moving averages of birth and death rates in Sri Lanka during the period 1874-1979, that crude birth rate began to show signs of decline in the early 1950s (see also, Department of Census and Statistics, 1974; Wright, 1968; 1970). Meanwhile, the crude death rate, continued to decline further.

Between 1952 and 1979, the crude birth rate in Sri Lanka registered a decline of 26.0 per cent (from 38.8 per thousand in 1952 to 28.7 per thousand in 1979) at an average rate of 1.1 per cent, per annum. The rate of decline however, is not evenly distributed over the period. During the inter-censal period 1953–63, the crude birth rate in the island recorded a decline of 11.9 per cent with an average rate of 1.3 per cent per annum. The continuity in the decline, however, was interrupted by fluctuations almost from year to year. During the next period 1963–74, the birth rate showed a relatively continuous decline. Between the two years it fell by 19.4 per cent at an average rate of 2.0 per cent, per annum. In 1975, however, the birth rate recorded an increase of 1.0 per cent over the previous year, and since then it has been increasing. In fact, between 1977 and 1979, it registered an increase of 4.4 per cent (see Table 1).

The fall in the crude birth rate in Sri Lanka since the mid–1950s has been attributed mainly to the following factors:

1. Changes in the age structure of the population
2. Changes in the marriage rate
3. Changing age at marriage, and
4. Changes in fertility

TABLE 1

Sri Lanka

Crude Birth Rate 1952 — 1979

Year	*CBR*	*%Change*	*Year*	*CBR*	*%Change*
1952	38.8	-0.2	1967	31.6	
1953	38.7	-7.7	1968	32.0	1.2
1954	35.7	4.4	1969	30.4	-5.0
1955	37.3	-2.4	1970	29.4	-3.2
1956	36.4	0.2	1971	30.1	2.3
1957	36.5	-1.9	1972	29.7	-1.3
1958	35.8	3.3	1973	27.8	-6.3
1959	37.0	-1.0	1974	27.5	-1.0
1960	36.6	-2.1	1975	27.8	1.0
1961	35.8	-0.8	1976	27.8	0.0
1962	35.5	-3.9	1977	27.9	0.3
1963	34.1	-2.6	1978	28.4	1.7
1964	33.2	-0.3	1979	28.7	0.3
1965	33.1	-2.4			
1966	32.3	-2.1			

Source: Registrar General's Office.

Many writers are of the opinion that the decline in the crude birth rate in Sri Lanka in the 1950s was not due to a fall in fertility. To quote Wright, '...all the decline of the crude birth rate between 1953-63 was attributable to population factors rather than fertility decline' (Wright, 1968, p. 750). According to Table 2, the General Fertility Rate (i.e. the number of births per thousand women in the child-bearing age of 15-44 years) reported a decline of 11 per cent from 189.3 in 1953 to 168.8 in 1963. At the same time, the Total Fertility Rate (i.e. the average number of children that would be born alive to a woman during her lifetime, if she was to pass through her child-bearing years, confirming to the age specific fertility rates of a given year) also registered a decline of 5.3 per cent.

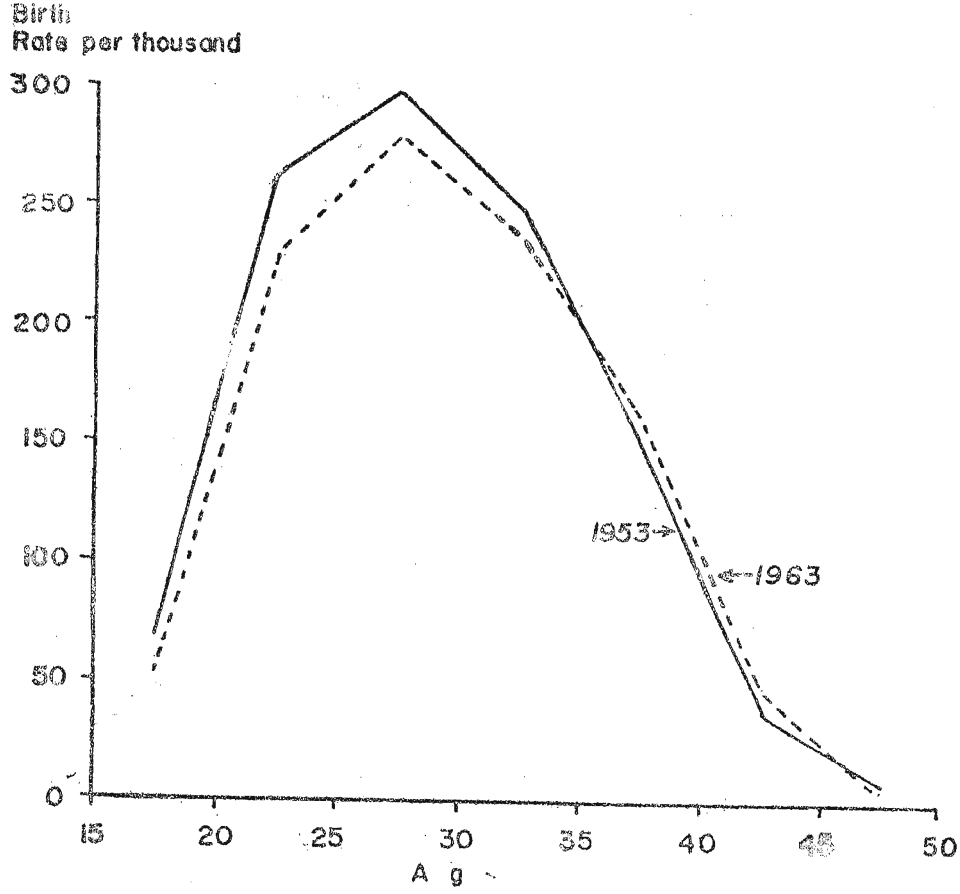

Fig. 4 Age Specific Fertility Rates 1953-1963.

As Fig. 4 shows, except for the age groups of 35-39 and 40-44 years the decline in birth rate was common to all other age groups. A decline in the age specific fertility rates however, does not necessarily imply a fall in fertility. In the computation of age specific fertility rates all women in the respective

age groups have been taken into account. In other words, the denominator includes all women in the reproductive age irrespective of their nuptial status. There is a wide opportunity therefore, for age specific fertility rates to be affected by changes in nuptial status.

TABLE 2

Sri Lanka

Age Specific Fertility Rates 1953 — 1963

Age Group (years)	1953	1963	*% Change* 1953—63
15—19	68.2	51.8	-24.0
20—24	259.3	227.8	-12.1
25—29	295.1	278.4	- 5.6
30—34	246.0	239.5	- 2.6
35—39	150.1	157.0	4.5
40—44	38.1	46.0	20.7
45—49	6.8	6.6	-2.9
GFR	189.3	168.8	-11.0
TFR	5.3	5.0	- 5.3

Source: Census of Population 1971, Sri Lanka, General Report (1978).

The fact that the decline in birth rate during the 1950s was resulted by factors other than a fall in fertility is also suggestive in the following table which shows age specific marital fertility rates in Sri Lanka in the same period. As Table 3 and Fig. 5 show, except in the age groups of 15-19 and 40-44, fertility of all married women in the reproductive age has remained almost unchanged. It should be noted that approximately 80 per cent of all annual births in Sri Lanka occur to women in the age group of 20-39 years. During the period under discussion this most fertile group of women have shown a slight increase in their fertility. Because of this behaviour of marital fertility the fall in the birth rate in Sri Lanka during the inter-censal period 1953-63 has been attributed to factors other than fertility, namely, structural changes in population and socio-economic changes.

TABLE 3

Sri Lanka

Age Specific Marital Fertility Rates 1953—63

Age Group (years)	1953	1963	*% change* 1953—63
15—19	288	354	22.9
20—24	394	396	0.5
25—29	339	344	1.5
30—34	280	270	-3.6
35—39	174	175	0.6
40—44	47	53	12.8
45—49	9	8	-11.1

Source: Census of Population 1971, Sri Lanka, General Report (1978).

The age structure of the female population in Sri Lanka by 1953, to a greater extent, had been shaped by the malaria epidemic of 1935 and influenza epidemic of 1918—23. Of greater significance was the impact of the malaria epidemic on the size of the female population aged 15-19 years (by 1953) which passed its main child bearing period-during the decade 1953-63. In 1953, women in the age group 15-19 years constituted 4.1 per cent of the total population compared to 6.3 per cent in 1946. Clearly, the small size of the cohort of women aged 15-19 years (by 1953) and of the group 30-34 years (affected by the influenza epidemic of the 1920s) would have tended to reduce the crude birth rate during the period (Wright, 1968).

Among the socio-economic factors that affected the birth rate in the island in the 1950s, the declining proportions of women entering the marital union deserve attention. In an analysis of fertility change in Sri Lanka during the period 1953-63, Wright shows that the marriage rate had declined by 18.1 per cent from 8.8 in 1953 to 7.2 per thousand population in 1963 (Wright, 1968).

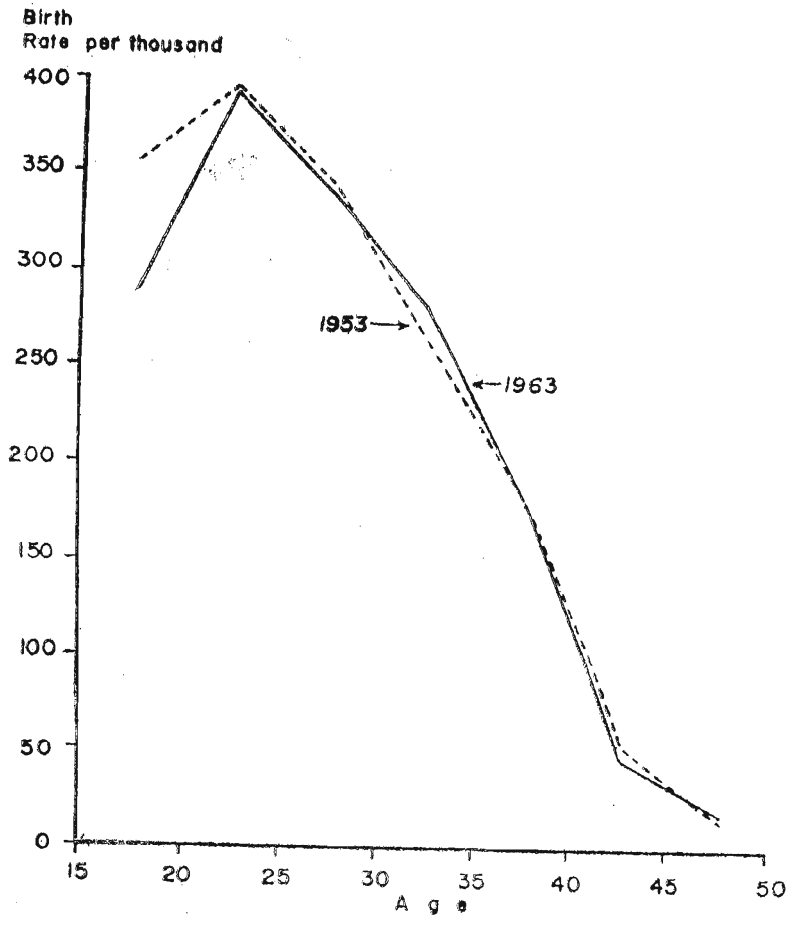

Fig. 5 Age Specific Marital Fertility Rates 1953-1963.

TABLE 4

Sri Lanka

Proportion of Women Currently Married (CM) and Never Married (NM) in 1953 and 1963

Age Group (years)	*CM*			*NM*		
	1953	1963	% change	1953	1963	% *change*
15—19	23.7	14.8	-37.6	75.7	85.0	12.3
20—24	65.7	57.6	-12.3	32.5	41.3	27.1
25—29	84.4	81.0	- 4.0	12.8	17.1	33.6
30—34	87.8	88.6	0.9	7.5	8.3	10.7
35—39	86.5	89.8	3.8	5.4	4.8	-11.1
40—44	80.7	86.1	6.7	5.0	4.3	-14.0
45—49	73.8	81.6	10.6	4.4	3.9	-11.4

Source: Fernando, 1975.

It is apparent from Table 4, that the decline in the proportion of currently married women in the younger age groups of 15–19, 20–24 and 25–29 years was substantial. Women in the broad age group of 15–29 years represent a significant portion of the female population who are in their peak reproductive period. The postponement of marriage by these women substantially limits the opportunities for child-bearing which results in reduced birth rates (see also never married column in Table 4 and Fig. 6).

The decline in the proportion of currently married women (and the simultaneous increase in the proportion of women never married) in the early years of the child-bearing span has, to some extent, been attributed to the non-availability of suitable partners. In Sri Lanka, it is customary for women to marry men who are five years older than themselves (Fernando, 1976). Based on this assumption, Table 5 attempts to show the availability of men at various marriageable age groups in relation to women five years younger to them at the censuses of 1953 and 1963. As it shows, except for women in the age group 30–34 years, in all other instances there was a scarcity of men by 1963. This may have had an effect on the decline in the proportion of currently married women and increase in the proportion of 'never married' women—a veritable marriage squeeze (see Fig. 7).

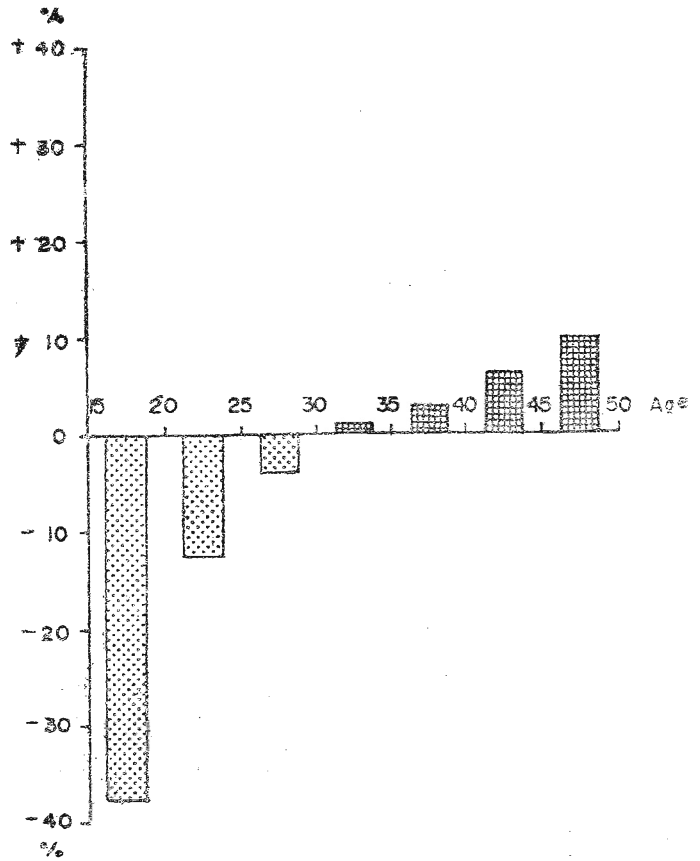

Fig. 6 Sri Lanka, percentage change in proportion of women currently married 1953-1963.

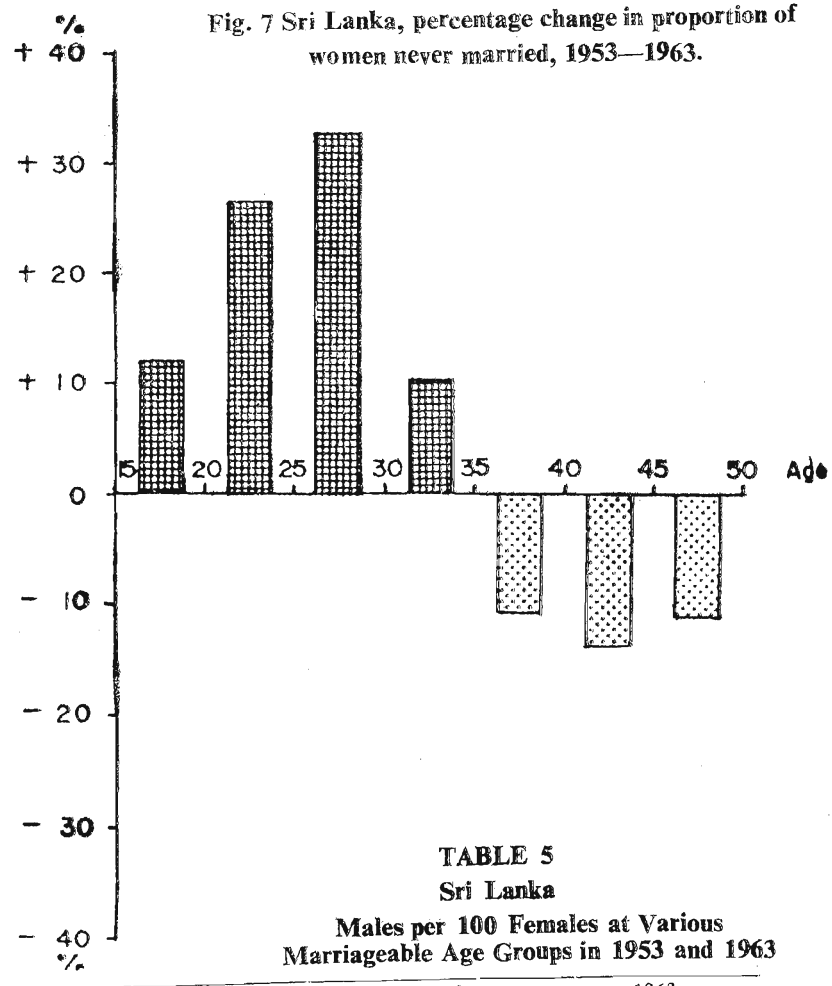

Fig. 7 Sri Lanka, percentage change in proportion of women never married, 1953—1963.

TABLE 5
Sri Lanka
Males per 100 Females at Various Marriageable Age Groups in 1953 and 1963

Age Groups (years)	1953	1963
M 20—24 / F 15—19	116.4	88.4
M 25—29 / F 20—24	99.7	85.1
M 30—34 / F 25—29	84.5	95.9
M 35—39 / F 30—34	124.1	109.2
M 40—44 / F 35—39	86.5	83.4
M 20—44 / F 15—39	101.7	91.2

Source: Fernando, 1975: M—Males, F—Females

Table 4 indirectly shows that women's age at first marriage during the inter-censal period 1953–63, had risen. In 1953, for instance, 23.7 per cent of women in the age group 15–19 years reported as 'currently married'. By 1963, however, only 14.8 per cent of the same age group were 'currently married'. This indicates a postponement of marriage by women in younger age groups. The delaying of marriage, or in other words, the rising age at first marriage, is evident in Fig. 8 also. It should be noted that the average age at first marriage, to some extent, has been affected by the registration of the long-standing customary unions. Although there may be a truth in this statement, Fig. 8 clearly shows an increase in the age of women at their first marriage that shortened the child-bearing period.

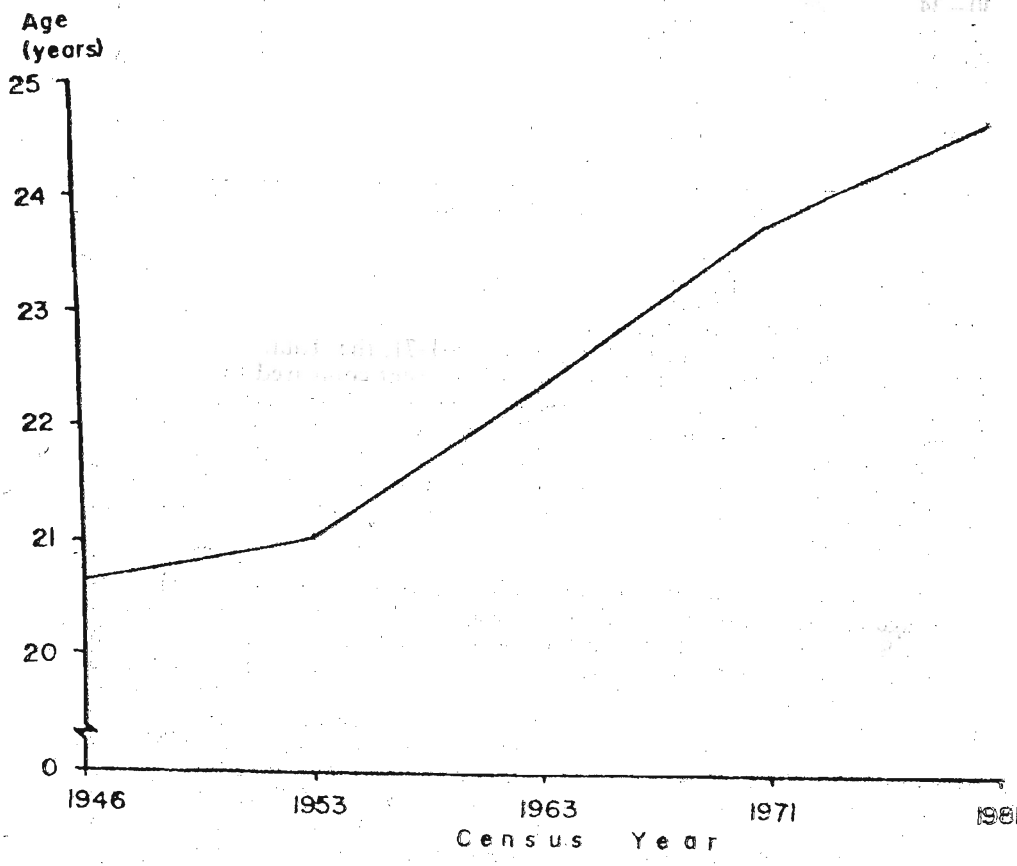

Fig. 8 Sri Lanka, Average age of women at first marriage at various Census Years.

TABLE 6

Sri Lanka

Age Specific Fertility Rates—1963, 1971, 1974

Age Group (years)	1963	1971	1974	% *change*		
				1963—71	1963—74	1971—74
15—19	52	43	31	-17.3	-40.3	-27.9
20—24	228	178	146	-21.9	-35.9	-17.9
25—29	278	230	161	-17.2	-42.0	-30.0
30—34	240	204	158	-15.0	-34.1	-22.5
35—39	157	141	126	-10.1	-19.7	-10.6
40—44	46	43	43	-6.5	- 6.5	—
45—49	7	7	6	—	-14.2	-14.2
TFR	5.04	4.22	-3.35	-16.3	- 33.5	-20.6

Source: Census of Population, Ceylon, 1963 and 1971; WFS-SL 1975 (1978).

There has been a marked decline in the crude birth rate during the decade commencing in the 1960s (see Figs. 2 and 3). The decline is also evident in Table 6 which shows Age Specific Fertility Rates in Sri Lanka in the years 1963, 1971 and 1974. During the period 1963-71, the Total Fertility Rate (TFR) showed an impressive decline of 16.3 per cent compared to that of 5.3 per cent during the previous inter-censal period. The decline in TFR between 1963 and 1974, however, was 33.5 per cent, suggesting a more rapid decrease in the early 1970s. As the Table shows, between 1971 and 1974, the TFR fell by 20.6 per cent. Also, unlike in the previous inter-censal period the decrease in birth rate was found to be common among women in all age groups (Fig. 9).

As described previously, a decline in birth rate may occur due to changes in the age structure of the population. The age structure of the female population in Sri Lanka in the 1960s, in fact, was more favourable toward a high birth rate. To quote Wright, '.. because of a rapid decrease in infant and child mortality in Ceylon after World War 2, and possibly an increasing birth rate, the proportion of women 15—49 in the population began to expand in the 1960s. Especially noteworthy is the higher proportion of women in the younger ages of this age group compared with previous years...' (Wright, 1970, p. 70). In 1974, the proportion of women in the reproductive age (15-49) to the total population was 23.7 per cent compared to that of 22.3 per cent in 1963, an increase of 6.3 per cent. Thus, it is difficult to attribute the decline in birth rate during the period 1963-74 to changes in the age structure of the female population. On the contrary, as the Department of Census and Statistics shows, the age structure of the female population was responsible for an increase in the crude birth rate during the period 1963-71 (Census and Statistics, 1974; see also WFS-SL, 1978).

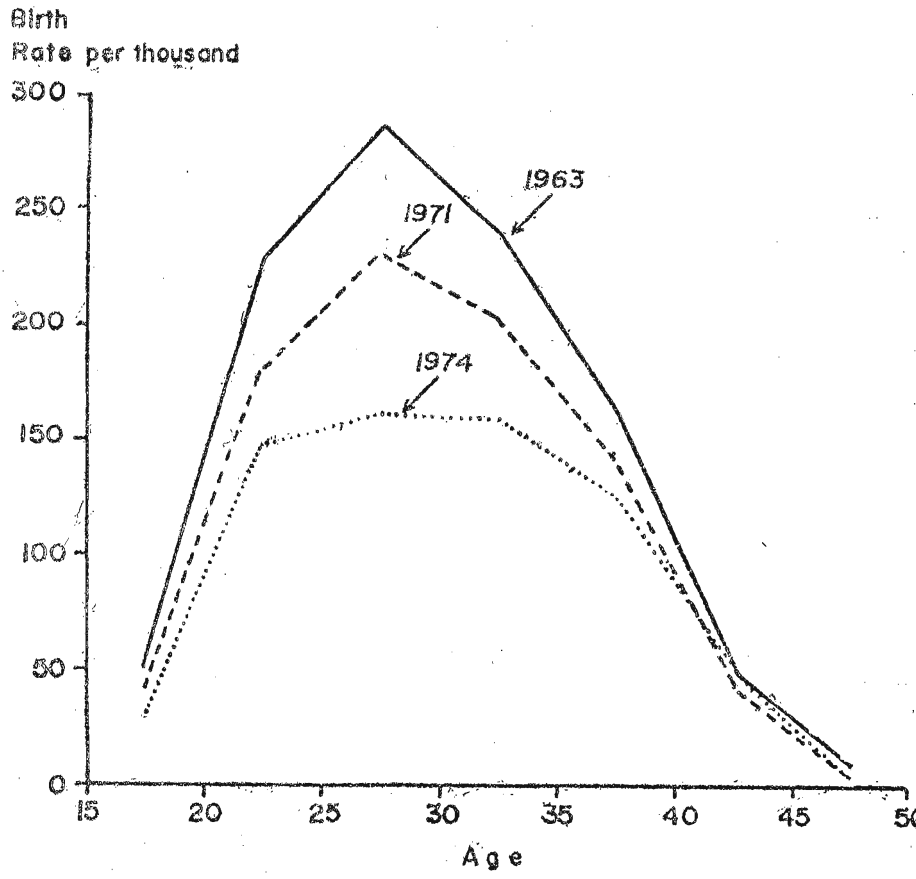

Fig. 9 Age Specific Fertility Rates 1963, 1971 & 1974.

What were the factors responsible for the decline in birth rate during the 1960s? According to Fernando, '...changes in the proportion of women marrying was the most significant factor contributing to the decline of the birth rate during the periods 1963–70 and 1963–71...' (Fernando, 1976, p. 37; see also, WFS-SL (1978); Department of Census and Statistics, 1974). Table 7 shows the current marital status of women in Sri Lanka by 5-Year age groups in the years 1963, 1971 and 1975. The decline in the proportion of women currently married can be seen in almost every age group. Of more significance, however, was the decline in the younger age groups who were in their peak child-bearing period (see Fig. 10). As the Table shows, only 73.5 per cent of women in the age group 25–29 years were currently married in 1971 compared to that of 81.0 per cent in 1963. The World Fertility Survey of Sri Lanka, too, confirmed the trend of postponement of marriage by Sri Lankan women, especially the young, aged between 15–29 years. According to the Survey, only 65 per cent of women in the above mentioned age group (25–29) had entered the marital union in 1975. It should be noted that of the female population aged 15–49 years, nearly 60 per cent belonged to the age group 15–29 years.

TABLE 7

Sri Lanka

Proportion of Women Currently Married, 1963, 1971 and 1975

Age Group (years)	1963	1971	1975	% *change* 1963–71	1963–75	1971–75
15—19	14.8	10.3	6.5	-30.4	-56.0	-36.8
20—24	57.6	15.9	38.0	-20.3	-34.0	-17.2
25—29	81.0	73.5	65.0	- 9.2	-19.7	-11.5
30—34	88.6	85.9	82.2	- 3.0	- 7.2	- 4.3
35—39	89.8	89.3	85.6	- 0.5	- 4.6	- 4.1
40—44	86.1	87.8	81.4	1.9	- 5.4	- 7.2
45—49	81.6	84.9	81.7	4.0	0.1	- 3.7

Source: Census of Population 1963; Census of Population 1971; World Fertility Survey of Sri Lanka (1978).

In evaluating the effects of the decline in proportions of young women entering the marital union on birth rate, two factors should be taken into account. First, the majority of women in Sri Lanka enter the marital union between age 20 and 30 years (the median age of Sri Lankan women at their first marriage, according to the Fertility Survey of Sri Lanka, was 23.9 years in 1975). Second, is the fact that over 80 per cent of the island's annual births occur to women in the age group 20-39 years. In 1971, for instance, 92.5 per cent of the total registered births occurred to women aged between 20 and 39 years (the corresponding figure for 1975 was 92.4 per cent). It is clear, therefore, that a decline in the proportion of women marrying in this highly fertile age groups would certainly depress the birth rate (in Sri Lanka, births outside wedlock are not common and considered anti-social).

The apparent decline in the proportions of women, noticeably the young, entering the marital union has been attributed to a wide range of factors that jointly indicate a rise in social status of women in the country. One such factor is education. Among a host of other factors, the creation of the Second Faculty of Arts of the University of Ceylon in Colombo in 1963 and the replacement of Higher School Certificate Examination with General Certificate of Education - Advanced Level Examination in 1964, to a considerable extent, widened the opportunities for higher education in general. At the same time, Vidyalankara and Vidyodaya Universities made a valuable contribution to the higher education of females in this country by accepting women as internal undergraduates.

The increasing number of women seeking employment to some extent, has been responsible for the rise in age at marriage. Although the number of employed women as a percentage of the total employed population is still low, there has been an increase in the female participation rates in the recent past. As has been observed by Karunatilake, '.....the level of female participation

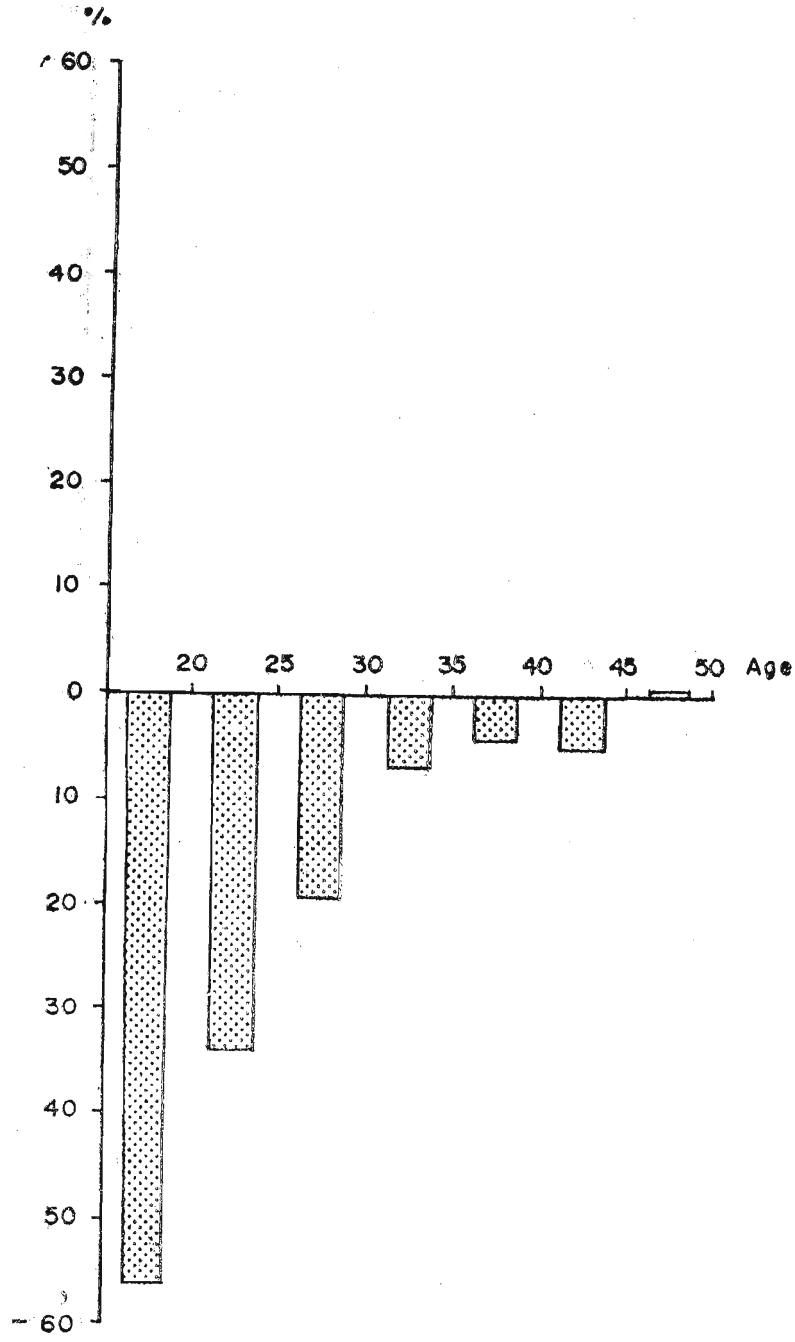

Fig. 10 Percentage in the proportion of currently married women 1963 & 1973.

in the labour force has risen considerably in the age groups between 20–34 years; the sharpest increase taking place between 1963 and 1973....The most remarkable feature is a very sharp increase in the labour force participation of women in the age group 20–24 years, which implies that large numbers of the educated young women have come onto labour market' (Karunatilake, 1980. p. 18).

The non-availability of suitable partners also has made its contribution to the decline in proportion of women marrying within popular age groups. It can be seen from Table 8 that there had been a scarcity of men 'available for marriage' in the important age groups like 25–29 and 30–34 years indicating a serious 'marriage squeeze' (Fig. 11).

TABLE 8

Sri Lanka

Males per 100 Females at various marriageable age groups: 1963 and 1971

Age Group	1963	1971
M 20—24 / F 15—19	88.2	90.6
M 25—29 / F 20—24	85.1	73.4
M 30—34 / F 25—29	95.9	77.7
M 35—39 / F 30—34	109.2	102.2
M 40—44 / F 35—39	83.4	87.0
M 20—24 / F 15—39	91.2	84.9

Source: Fernando, 1975.

The other factor responsible for the fall in birth rate in the 1960s was the decline in fertility itself (Wright, 1968; Fernando, 1976; WFS—SL, 1978). Table 9 shows the age specific marital fertility rates in Sri Lanka in the years 1963, 1971 and 1974. According to the Table, births occurred to married women in Sri Lanka has declined considerably during the period 1963–74. Of more significance, however, was the decline in fertility among young women aged 15–34 years. The World Fertility Survey of Sri Lanka, too, has noted the accelerated decline in marital fertility in the early 1970s. To quote the Survey, '...within marriage, the decline has occured during ages 25–40, with special concentration on ages 25–35. The annual marital fertility in this range appears to have dropped by 26 per cent between 1970 and 1974. It is particularly noteworthy that the decline is highlighted in ages below 35' (WFS—SL, 1978; p. 98).

TABLE 9

Sri Lanka

Age Specific Marital Fertility Rates 1963, 1971 and 1974

Age) (years)	1963	1971	1974	% *Change*		
				1963—71	1963—74	1971—74
15—19	354	382	339	7.9	- 4.2	-11.2
20—24	396	402	357	1.5	- 9.8	-11.1
25—29	344	316	240	- 8.1	-30.2	-24.0
30—34	270	232	189	-14.1	-20.8	-18.5
35—39	175	147	139	-16.0	-20.5	- 5.4
40—44	53	46	53	-13.2	0.0	15.2
45—49	8	7	7	-12.5	-12.5	0.0

Source: Census of Population, 1963; Census of Population 1971; World Fertility Survey—Sri Lanka, 1978.

Several writers have attempted to relate the decline in marital fertility to the Family Planning Programme that gained momentum in the late 1960s with a target birth rate of 25 per thousand by 1975. According to Wright, however, 'marital fertility decline clearly began before organized programme efforts with the IUD, Pills, Sterilization and other methods had much impact'. (Wright, 1970, p. 19). Nevertheless, the contribution of the family planning programme to the decline in marital fertility cannot be overlooked. According to the Fertility Survey, of the total number of ever-married women in the island, 91 per cent had heard of contraceptive methods. Although this was a slightly lower figure compared to 100 per cent knowledge of contraceptive methods in some developing countries like Fiji and Costa Rica, the figure for Sri Lanka was, indeed, much higher than in many of her neighbouring countries. The percentages of ever-married women who knew about contraceptive methods in Nepal, Pakistan and Indonesia, for instance, were 22, 75 and 77 respectively. As the Fertility Survey revealed, women in Sri Lanka show a favourable attitude towards family planning. As it says, 87 per cent of currently married women with four kids (including current pregnancies) did not want any more children (even in rural areas, the figure was fairly high being 86 per cent). In Bangladesh, only 52 per cent of women in the same category wanted no more children. Again, in Sri Lanka, 60 per cent of women with two children did not like the idea of having any more children, according to the Survey. Also, in terms of actual use of contraceptive methods, the situation in Sri Lanka was encouraging. As the Survey revealed, 41 per cent of women exposed to child-bearing (i.e. currently married, non-pregnant fecund women) had been using some method of contraception—sterilization being the widely practised technique.

The number of new acceptors of family planning services during the recent past has been increasing. In 1966, for instance, the number of new acceptors of family planning services was 36,695 and this had risen to 95,300

by 1973. According to Fernando, changes in marital fertility have accounted for 37 per cent of the decline in crude birth rate during 1963–71 and 'such declines in age specific marital fertility as have occurred may be attributed to contraceptive use within the National Family Planning Programme and outside it' (Fernando, 1976, p. 41).

Since 1974, there has been an increase in the crude birth rate in Sri Lanka. In 1979, according to data published by the Registrar General, the crude birth rate in Sri Lanka was 28.7 per thousand compared to that of 27.5 per thousand in 1974—an increase of 4.3 per cent. Of more significance, however, was the continuity of the trend which is shown in Fig. 12.

An investigation into reasons underlying the apparent increase in crude birth rate, especially after a period of continuous decrease, would be of importance in many respects. Such an inquiry, however, is hampered by the non availability of reliable and comparable data. The available data, on the other hand, are mainly estimates, and observations based on such data should be interpreted with caution. An increase in crude birth rate can occur due to population factors (such as age structure of the population) as well as socio-economic factors (affecting fertility). According to the estimates of mid-year population of Sri Lanka, published by the Registrar General, there has been hardly any change in the proportion of women in the reproductive age to the total population during this period. In 1978, for example, women in the reproductive age group constituted 23.8 per cent of the total population compared to that of 23.7 per cent in 1974. According to the Census of Population 1981, however, the proportion had risen to 25.5 per cent. It should be noted, however, that the census figure was only an inflated estimate based on a 10 per cent sample, and the comparison of census data with those of the Registrar General, therefore, should be done with extreme caution.

As previously mentioned, over 80 per cent of all annual births in Sri Lanka occur to women in the age group 20–39 years. However, there has been hardly any noticeable change in the proportion of this most fertile group of women during the period under consideration. As the Registrar General's estimates show, in 1974, women in the age group 20–39 years constituted 29.4 per cent of the total female population. By 1978, the proportion had risen only by one decimal point (29.5 per cent).

As most of the births in Sri Lanka occur within marriage, the changes in the proportion of women entering marital union, to a considerable extent, affect the birth rate in the island. A comparison of data given in the two Censuses would show a continuous decrease in the proportion of women currently married in each age group. One who compares data of the two Censuses of 1971 and 1981 might conclude that the crude birth rate in the island during the late 1970s has increased in spite of the declining proportions of women entering the marital union. However, an entirely different trend is revealed when the relevant data of the Census of Population 1981 are compared with those of the Fertility Survey of Sri Lanka. As can be seen from Table 10, between 1975 and 1981 the proportion of women currently married in every age group except 30–34 years had increased, creating a favourable environment for more babies.

TABLE 10

Sri Lanka

Proportion of Women Currently Married

1971, 1975 and 1981

Age Group (years)	1971	1975	1981	*% change*		
				1971—75	1971—81	1975—81
15—19	10.3	6.5	10.1	-36.9	- 1.9	55.4
20—24	45.9	38.0	43.8	-17.2	- 4.6	15.3
25—29	73.5	65.0	68.2	-11.6	- 7.2	4.9
30—34	85.9	82.0	81.1	- 4.5	- 5.6	- 1.0
35—39	89.3	85.6	85.7	- 4.1	- 4.0	0.1
40—44	87.8	81.4	85.8	- 7.3	- 2.3	5.4
45—49	84.9	81.7	83.8	- 3.8	- 1.3	2.5

Source: Census of Population 1971; Census of Population 1981; World Fertility Survey of Sri Lanka, 1978.

The same problem arises in the case of mean age of women at their first marriage. A comparison of data given in the Censuses of Population 1971 and 1981 would show an increase in the mean age of Sri Lankan women at marriage over the period. When data given in the Fertility Survey of Sri Lanka are compared with those of Census of Population 1981, however, an entirely different trend is revealed. The accuracy and dependability of any interpretation of the demographic trends in the island in the late 1970s based on the data given in the Fertility Survey and the Census of Population 1981, therefore, depend essentially on the comparability of the data sources.

The other factor that contributes to an increase in birth rate is fertility itself. Unfortunately, it is difficult at the moment to obtain data on fertility behaviour of women in Sri Lanka for the period after 1975. Once data are available they would be of great assistance in revealing the factors that caused the increase in crude birth rate in Sri Lanka in the late 1970s.

Conclusions

In this essay, an attempt has been made to identify and examine the basic features of the demographic transition in Sri Lanka. As the study reveals, the country has almost completed Stage 2 of the transition. In the discussion of stage 1, attention was paid more on the declining death rate. The decline in the birth rate characterized Stage 2. As pointed out, the down trend in crude death rate began not in the year 1946–47 but in the mid 1920s. In the 1950s, the crude birth rate also began to show signs of decline which became more steady and rapid in the following decade. During the 1950s population factors played a dominant role in bringing the birth rate down. In the latter part of the decline, socio-demographic factors like declining

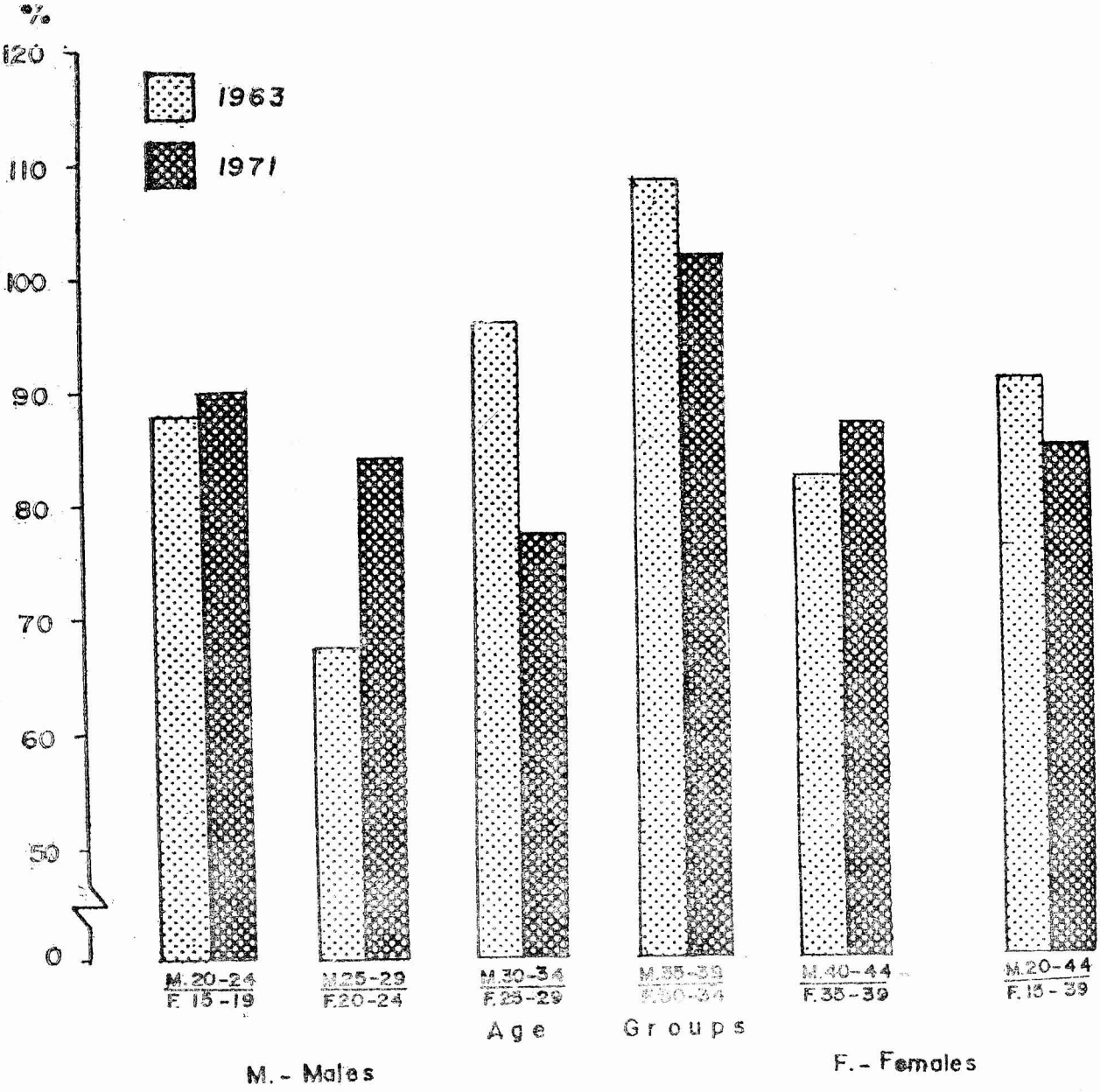

Fig. 11 Sri Lanka, Males per 100 Females at various marriageable ages

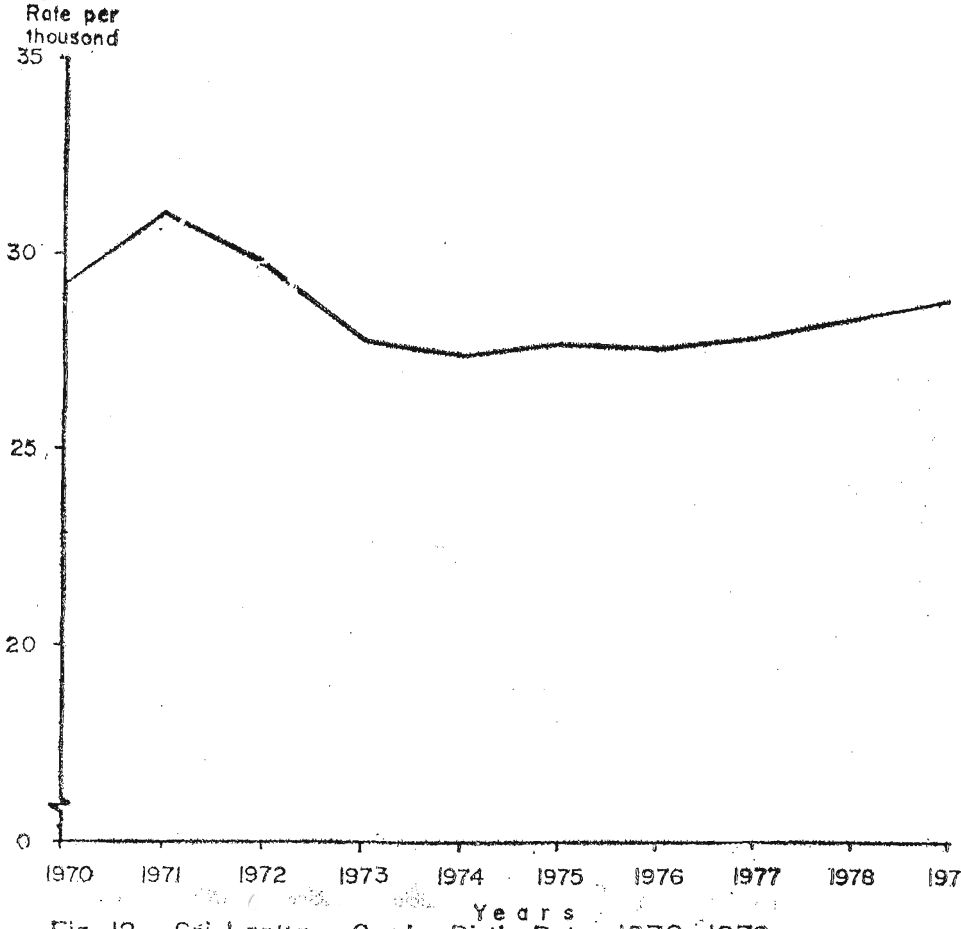

Fig. 12 Sri Lanka, Crude Birth Rate 1970-1979.

proportions of women entering marriage played a major role. Also, the decline in fertility itself, to a considerable extent, was responsible for the fall in birth rate. According to many writers the decline in fertility in the West was a result of the growing individualism associated with urbanization, modernization and economic advancement. In Sri Lanka, however, it was not modernization or economic development, but the lack of development, manifested in rising levels of unemployment, low levels of living and other economic hardships that induced couples to postpone marriage and ultimately to limit their family size. At this point, it would be of relevance to reproduce the views of George Immerwahar, formerly WHO adviser to the Government of Sri Lanka. The decline in the proportion of women entering marriage, according to Immerwahar, was due to economic difficulties prevalent in the country at that time. Commenting on the relationship between economic backwardness and fertility behaviour, he wrote: 'better times might mean more marriages and more babies among younger women', (quoted in Marshall, 1978 p. 9). A similar view has been expressed by Alex Marshall, former UNFPA co-ordinator in Sri Lanka. According to Marshall, 'the mystery is what will happen if the poverty side of the equation changes. Will Sri Lanka fertility rates continue their decline towards European levels, or easing of economic stringency be celebrated by a bumper crop of children?' (Marshall, 1978 p. 7). Answers to these questions have to be provided by detailed studies dealing with different aspects of economic progress and fertility. Findings of such studies would be of great assistance in identifying the underlying factors of the rise in crude birth rate in the late 1970s, and also, they would be of much help in directing the national family planning programme in the future.

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