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THE SOCIAL AND DEMOGRAPHIC STRUCTURE OF TASMANIA'S WEST COAST

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ABSTRACT

The populations of mining settlements on Tasmania's West Coast are characterised by high masculinity and age-structures which differ markedly from that of Tasmania as a whole. The migration of youth and the relative absence of elderly people lead to clear demographic imbalances. These imbalances, together with the isolation of West Coast settlements and their relative lack of services and amenities, create a number of problems for the community including a high labour turnover and an apparent inability to provide basic community facilities.

INTRODUCTION

In any region, distinctive elements of the area's geographic position and economic base may be reflected in the social and demographic structure of the population. The populations of towns and cities at different levels of the urban hierarchy may be characterised by basic differences in demographic composition and social mix. For example, large metropolitan centres might be expected to have greater heterogeneity of socio-economic, demographic and ethnic characteristics than small towns. Similarly, towns with basically different functions - the tourist resort, the service town, the mining town, the administrative centre and so on - may also exhibit distinctive demographic and social structures which reflect function, size and location.

The West Coast region of Tasmania is characterised by towns and settlements based on a single industry or economic activity. Mining, the driving force behind early settlement on the West Coast, continues to dominate the economic base of the region; and other economic activities including agriculture and manufacturing, are poorly developed and have little potential for growth.

The popular image of a mining town inherits a strong legacy from the pioneering days, and includes a reputation for arduous work and hard drinking. The mining settlements themselves are seen as company towns, overwhelmingly homogeneous in terms of their social characteristics and the structure of their populations. Young, masculine and a predominance of manual occupations are seen as norms. This study examines a number of social and demographic characteristics of the West Coast population including occupational and socio-economic characteristics, sex ratios and age-structure. It seeks to determine to what extent the West Coast population is distinctive in the Tasmanian context, and whether there are any special needs or issues which arise from distinctive elements of the population structure of the region, or from social and demographic imbalances.

TRENDS IN WEST COAST SETTLEMENTS

Historically, the twentieth century has seen a decline, both absolute and relative, of the West Coast's role in the overall pattern of settlement in Tasmania. In 1971, the Western Statistical Division (comprising the municipalities of Gormanston, Queenstown, Strahan, Waratah and Zeehan) contained 12,368 people, some 3.2 per cent of the State total. This is less than half of the peak population of the West Coast, estimated by Blainey (1954) to be around 25,000 (or one-seventh of Tasmania's total) just before the turn of the century. By 1901 the population of the West Coast had fallen to 19,000

in response to a collapse in metal prices, and by 1911 it had fallen still further to 15,000, or almost 8 per cent of the State total.

Many regions in Australia and other western countries have had similar population declines this century, largely as a result of rural-urban migration associated with increased mechanisation in agriculture and trends towards increasing farm size (see, for example, Beale 1964, Johnston 1967).

However, settlement on the West Coast has always been focussed on the towns and the mining centres and there has never been a large rural population. In 1971 over 81 per cent of the total population of West Coast municipalities lived in the four urban centres of Queenstown, Rosebery, Zeehan and Savage River - a level of urbanisation higher than that for the State population as a whole (74.2 per cent) and higher than every statistical division outside the Hobart and North Central (Launceston) Statistical Divisions. The majority of the remaining 19 per cent of the West Coast population resides in the smaller towns and bounded localities, such as Strahan and Gormanston, which do not fall within the urban definition adopted by the Australian Bureau of Statistics.

In 1971 Queenstown was the largest town on the West Coast (population 5,025) and was the seventh largest urban centre in Tasmania. In 1901, however, Queenstown had almost the same population as it did in 1971 (5,051 in 1901) while Zeehan, in 1901, had declined from its peak population of some 8,000 in the late 1890s to be approximately the same size as Queenstown. By 1961 Zeehan had only 780 people, but 10 years later had almost doubled its population to reach 1,471. This paper does not seek to document in detail the changing fortunes of West Coast towns, nor does it seek to analyse the relative decline of the West Coast in terms of Tasmania's overall settlement pattern. However, these fluctuations in growth have important implications for the social and demographic structure of mining settlements. Periods of expansion, for example, are generally characterised by an increasingly youthful and masculine population.

As the West Coast has no significant rural population in its hinterland, the municipalities within the Western Statistical Division (WSD) may be discussed meaningfully without distinguishing between urban and rural populations.

SOCIAL AND DEMOGRAPHIC CHARACTERISTICS OF THE WEST COAST POPULATION

In an analysis of the population characteristics of Australian mining settlements Wilson (1962) commented that: "Ideally, "mining settlements" should include only those in which mining is an activity of sufficient importance not only to markedly affect the occupation structure, but also to be reflected in such other features as the social demographic, and even physical characteristics of towns and their inhabitants."

Wilson used five population characteristics to determine the demographic distinctiveness of mining settlements - (1) the dominance of the major industry, (2) the proportion of the population born overseas, (3) the proportion of the population over 65 years, (4) the sex ratio in the workforce and (5) the sex ratio in the total population. On the basis of these indices he derived a summary index of distinctiveness which showed that mining settlements in Australia had more distinctive population structures than non-mining settlements. Of interest in the Tasmanian context is Rosebery's score which was the highest of the 29 mining settlements considered by Wilson. Its population structure conformed closely to the stereo-typed view of mining settlements with high masculinity, a low proportion of old people and other distinctive demographic characteristics. By the same summary measure, Queenstown emerged as a middle-ranking mining settlement with a population structure comparable to that of Broken Hill in terms of its demographic distinctiveness. The current analysis examines a range of social and demographic characteristics, not to compare them with other mining settlements in Australia, but to determine how distinctive they are in the Tasmanian context.

Homogeneity in the Workforce

Even in communities based predominantly on a single industry many other occupational and industrial opportunities are created, including construction, wholesale and retail activities and community services. Settlements which are commonly characterised as mining settlements may have varying proportions of their workforce in the mining industry. Wilson, for example, considers 'mining settlements' to be those with more than 15 per cent of their workforce employed in mining. By this measure, the dominance of mining in the industrial structure of the West Coast workforce is overwhelming. In 1971, over 59 per cent of the population of the WSD was employed in mining with the highest proportion for any municipality being 71.7 per cent in Waratah, and the lowest being 23.7 per cent in Strahan (table 5).

Table 5
WEST COAST MUNICIPALITIES, 1971: SELECTED POPULATION CHARACTERISTICS

	Percentage of workforce in			Percentage of population		Females per 100 males	Males per female in workforce
	mining	dominant industry	dominant occupation group	over 65 yrs	foreign-born		
Gormanston	55.2	55.2	44.8+	3.3	2.5	68.6	10.5
Queenstown	57.0	57.0	30.5+	3.9	9.1	85.0	3.5
Strahan	23.7	23.7*	25.2+	4.9	6.0	85.5	4.4
Waratah	71.7	71.7	39.9+	1.6	19.0	76.7	6.4
Zeehan	60.1	60.1	33.6++	1.6	15.2	66.0	5.8
Western S.D.	59.4	59.4	32.1+	2.7	12.4	75.9	4.6
Tasmania	3.0	20.5**	32.2+	7.9	10.3	98.7	2.4

* same proportion of workforce in mining as in agriculture
** manufacturing
\+ 'craftsmen etc.'
++ miners

The dominance of the mining industry on the labour force of the West Coast is, in fact, higher than most other mining settlements in Australia. For example, in 1971 the proportion of Broken Hill's workforce in mining was 43.3 per cent, while for Mt. Isa the figure was 31.6 per cent. These higher figures for the Tasmanian settlements undoubtedly reflects their smaller size, which restricts the industrial diversity of the towns, and reflects the fact that they are basically point settlements with sparsely settled hinterlands.

Examination of the major occupational groups highlights the fact that miners *per se* are not necessarily the dominant occupational group, even in mining settlements as distinctive as those on Tasmania's West Coast. In 1971, miners formed 25.8 per cent of the total labour force of the WSD and some 31.3 per cent of the male labour force. But the dominant occupational group on the West Coast was 'craftsmen, production-process workers and labourers n.e.c.' who formed 32.1 per cent of the WSD labour force - a figure almost identical to that for the State as a whole. In fact, Zeehan was the only municipality in 1971 in which miners formed the dominant occupation group (table 5).

This raises the wider question of the extent to which settlements dominated by a single industry such as mining towns, have much less occupational diversity than other settlements, and therefore less social mixing of different groups. One measure of homogeneity or heterogeneity of population characteristics which has been postulated

is an index based on the probability that two individuals selected at random from a given population will be different in terms of a specified characteristic - say occupation or religion (Lieberson 1969).

Lieberson has shown how this index (A_W) can be used to determine the position of a population on a continuum ranging from homogeneity to heterogeneity with respect to any given characteristic. If every individual in the population were different with respect to the specified characteristic the index A_W would equal 1.0. If everyone were the same for that characteristic the population would be completely homogeneous and the value of A_W would be 0.

For the WSD as a whole, the index A_W for occupational groups was 0.81; while for Queenstown, the largest West Coast settlement, the index was 0.83 in 1971. The index for Queenstown, however, was identical to that of the Hobart Statistical Division at that time. In terms of the broad occupational groupings used in ABS publications, it means that the probability of two randomly-chosen individuals having different occupations in Queenstown is exactly the same as the probability of two randomly-chosen individuals in the Hobart area having different occupations.

The relative occupational heterogeneity of the West Coast, and Queenstown in particular, is reinforced when the A_W index for occupational groups in Queenstown is compared with that of New Norfolk, the town which lies immediately above Queenstown on the urban hierarchy. Although slightly larger than Queenstown (1971 population 6,839) there is less occupational diversity in New Norfolk (A_W = 0.789) than there is in Queenstown. However, the relatively greater occupational homogeneity of New Norfolk may be related to its proximity to Hobart and the fact that certain occupational groups working in New Norfolk may commute from Hobart. But for the West Coast, the dominance of the mining industry does not lead to a narrow occupational structure, and the mining industry and the settlements on the West Coast clearly support a large number of professional, clerical, sales and service workers as well as miners and tradesmen more directly associated with the actual mining operations. In Queenstown, for example, there is more than one professional worker for every two miners.

Social Mix

The degree of occupational and socio-economic homogeneity or heterogeneity of any settlement has direct implications for the question of social mix. The term 'social mix' is frequently used as a term synonymous with 'social balance', 'heterogeneity', 'the balanced community' and other like terms. Social mix can be taken to mean either the mixture of dwellings for different socio-economic groups in one residential area, or the interaction of residents in a community or neighbourhood (Heine and Sarkissian 1976).

In small, isolated communities, either of these concepts of social mix is dependent on a heterogeneous occupational and socio-economic structure. The index of diversity for occupational groups suggests that the West Coast population has greater heterogeneity than is commonly attributed to mining settlements. This suggests that the *potential* exists for some degree of social mix among the West Coast population. The extent to which social mix actually occurs, however, cannot be evaluated from census data. A better understanding of the degree of social mix which does occur within West Coast towns could be gleaned, for example, by examining the extent to which company housing segregates white collar staff and blue collar workers into different streets or residential districts. An alternative measure of social mix could be obtained by evaluating the social homogeneity or heterogeneity of people meeting in key areas of social contact, such as the Queenstown Club or football or golf club social rooms. These considerations of social mix from a behavioural perspective raise many questions which cannot be answered within the context of this paper, but they would be fundamental questions to be answered by a more exhaustive analysis of the social structure of the West Coast.

Demographic Structure

It could also be expected that basic elements of the demographic structure of the West Coast would be distinctive and reflect aspects of the region's economic structure and relative isolation from the major population centres in Tasmania.

Sex Ratio. Many mining areas are characterised by a predominance of males. In the pioneer stages of mining settlements the imbalance between the sexes is overwhelming. As mining settlements achieve a measure of permanence the proportion of females in the population may increase substantially. Indeed, increases in the number of women in a mining settlement may be an important influence in changing the character of the settlement. Blainey (1954) has commented on the relationship between the growth of West Coast towns and the nature and permanence of the housing stock as miners' wives, many left behind on the dying Victorian goldfields, joined their menfolk on Tasmania's West Coast. "As the female populace increased, the shanty suburbs gave way to small houses with red or tarred roofs."

In time, many women did migrate to the West Coast, thus enabling the development of stable family groups, as well as the development of schools and other services which were absent during the pioneering stages when women and children were so few in number. But by 1911, when the era of peak population on the West Coast had well and truly passed, there were still only 77 women in Queenstown for every 100 men - a masculinity ratio similar to that for the entire West Coast at the time (table 6). However, as the

Table 6
WEST COAST MUNICIPALITIES: SEX RATIO (FEMALES PER 100 MALES) 1911-1971

	1911	1921	1933	1947	1954	1961	1966	1971
Gormanston	65.1	60.5	57.3	80.0	67.6	76.0	73.1	68.6
Queenstown	77.3	88.7	81.0	88.2	82.8	82.6	81.6	85.0
Strahan	92.2	86.0	86.6	92.8	88.8	90.9	90.3	85.5
Waratah	66.0	79.2	72.2	80.1	80.4	63.8	30.2	76.7
Zeehan	85.9	93.4	85.5	78.1	76.7	70.6	69.8	66.0
Western S.D.	77.7	83.3	77.5	84.1	80.1	77.6	72.2	75.9
Tasmania	95.9	98.4	97.7	98.9	96.5	97.2	98.2	98.7

data in table 6 indicate, the masculinity of the West Coast population has persisted, and there were fewer females per 100 males in 1971 than there were 60 years earlier. In addition, the ratios in table 6 illustrate the degree of imbalance which can arise when a new pioneering stage follows the development of new mining operations. For example, the development of the Savage River operations in the 1960s meant that by 1966, there were only 30 women for every 100 men in Waratah, but five years later the pioneering stage had passed and the sex ratio for the municipality equalled that of the West Coast as a whole.

An unbalanced sex ratio in small isolated communities may have a number of social consequences, including a high turnover of single male workers, and perhaps a greater emphasis on heavy drinking, gambling and prostitution than might be found in a more balanced community. Such consequences have been reported in other small, isolated and single-industry settlements (see, for example, Lucas 1971) but the extent to which they occur on the West Coast could only be established through more direct investigation.

An unbalanced sex ratio is also a distinctive characteristic of the workforce on the West Coast. For Tasmania as a whole, there were 2.4 male workers to every female in the workforce in 1971. This ratio was 4.6 for the WSD in 1971, while Gormanston (10.5 male workers per female worker) and Queenstown (3.5) marked the extremes of the

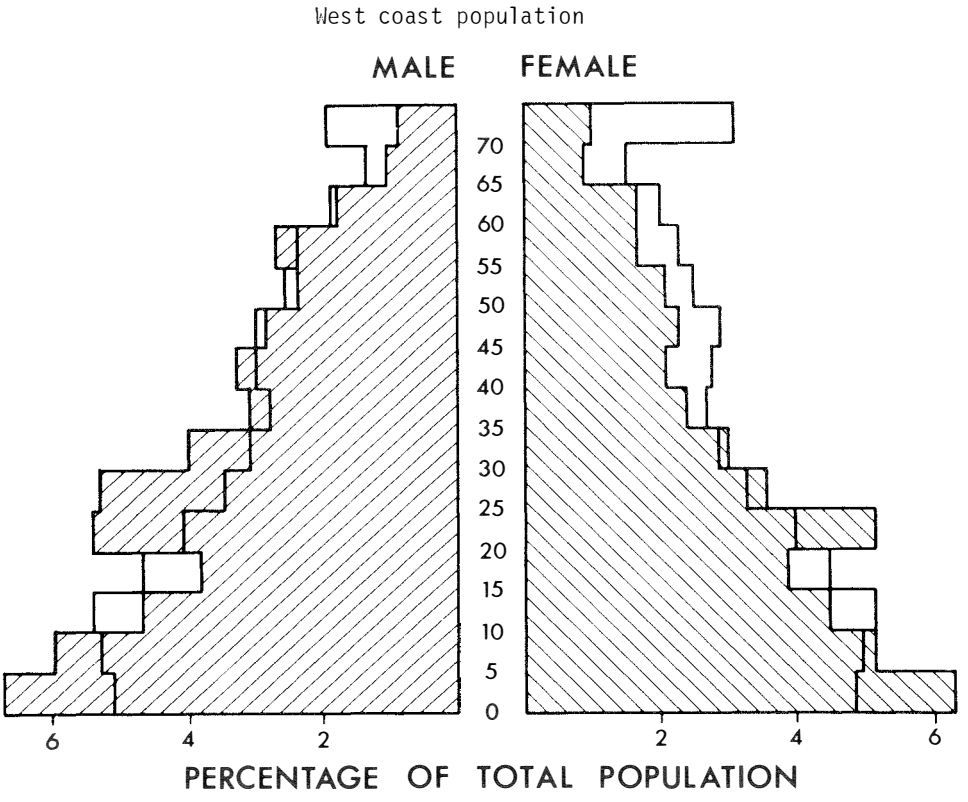

FIG. 10. - Population pyramids: Queenstown and Tasmania, 1971.
Queenstown is represented by the shaded pyramid.

individual municipalities. This imbalance in the workforce is largely due to the economic base of the region, with employment opportunities for women being restricted to clerical, sales and service employment.

Age-Structure. As well as distinctive sex ratios, settlements on the West Coast are also characterised by age-structures which differ sharply from those of Tasmania as a whole. Areas with few employment opportunities offer little attraction for the school leaver and the consequential outward migration may leave mining settlements with a relative deficit of young adults. Similarly, many people move out of mining settlements when they retire from the workforce which leaves relatively few old people in the community.

The overall differences in age-structure between two or more populations are commonly evaluated by comparing the population pyramids of each area. For example, in figure 10, the age-sex pyramids of Queenstown LGA and Tasmania are superimposed. From this diagram it is clear that Queenstown has a relative deficit of those over 65 years and proportionally more of its male population in the 20-35 year age-group than does Tasmania as a whole.

However, it is difficult to evaluate the significance of many of the deviations from a visual comparison only. Consequently, attempts have been made to compare variations in age-structure based on index numbers, but McCreary (1963) has suggested that standard scores, or z scores offer a more accurate measure of divergence. The chief advantages of using standard scores are that comments need be made only on those divergencies that exceed specified confidence limits, and the scores and graphs of

different populations are directly comparable irrespective of the size of the populations.

Standard scores for five broad age groups have been calculated for the male and female populations in 1911, 1947 and 1971 (figures 11 and 12). For both males and females, the magnitude of the relative deficit of people over 65 years is clearly demonstrated (see also, table 5). The outward movement of people after they have left the workforce is reflected in the age-structure of the residual population, and undoubtedly reflects the unattractive nature of mining towns as places of retirement. In addition to isolation and a relative lack of services and facilities, the West Coast is characterised by low rates of home ownership (38.7 per cent home ownership in WSD, 1971, compared to 66.9 per cent for Tasmania) and this lack of investment in the area, both financial and social, is less likely to hold people on the West Coast. Dependence on company housing is greatest in Zeehan and Waratah where levels of home ownership were 18.9 and 9.9 per cent respectively in 1971. The population structure at three points in time indicates that the West Coast community has not proceeded through the various stages of the life cycle from youth to maturity. This contrasts sharply with the increasing maturity of small single-industry towns in Canada in which Lucas (1971) reports a progressive aging of the population and the presence in mature communities of a large immobile population of older people. The migration of the older people from the area can also affect the death-rate, which for Queenstown and the West Coast are commonly lower than for other parts of the state (see for example, Reeves 1957).

In keeping with the presence of a predominantly male population and workforce, the population of the West Coast has been characterised by a relative 'surplus' of males, especially the 'young-mature' workers in the 30-44 age group. The relative absence of young adults (15-29 years) from the West Coast population is typical of many areas of static or declining population. The increased youthfulness of the male population in 1971 reflects the retention of local youth and the inward movement of other young men in response to the expansion of mining activities in the 1960s at Savage River, Renison Bell and Luina.

Foreign-Born Population. The tendency for the populations of mining towns to have a higher than average proportion of foreign-born (Wilson 1962) is only marginally applicable to the West Coast population. Certainly, in 1971 the WSD had a higher proportion of its population overseas-born than did the total Tasmanian population but only two municipalities (Zeehan and Waratah) had individual proportions above the State figure. Indices of population diversity for broad birthplace groups confirm the homogeneity of the West Coast population. The A_W index for the WSD was 0.22 in 1975 compared to 0.23 for the Hobart Statistical Division. Comparisons between Queenstown (0.16) and New Norfolk (0.13), Queenstown's immediate superior on the urban hierarchy, indicate that both have a high degree of birthplace homogeneity. For both Zeehan and Waratah, the two municipalities on the West Coast with the greatest proportion of overseas-born residents, at least 50 per cent of those born overseas were from the U.K. and Ireland and 40-50 per cent of foreign-born residents had resided in Australia for less than 5 years. In overall terms though, overseas-born residents are not a dominant social group in West Coast mining settlements.

POPULATION STRUCTURE AND COMMUNITY PROBLEMS

Some of the problems which face West Coast communities have already been discussed. These include the outward movement of elderly people, which can lead to an imbalanced age-structure. The outward migration of youth is another matter of concern for many rural and isolated communities. Migration is selective of many factors and it is commonly found that it is the most able youth who migrate from such areas (see for example, Gist and Clark 1933, Hamilton 1959). Certainly the lack of higher secondary education facilities or tertiary education on the West Coast mean that those proceeding to higher education must leave the area. Most will not return. Whether such selective

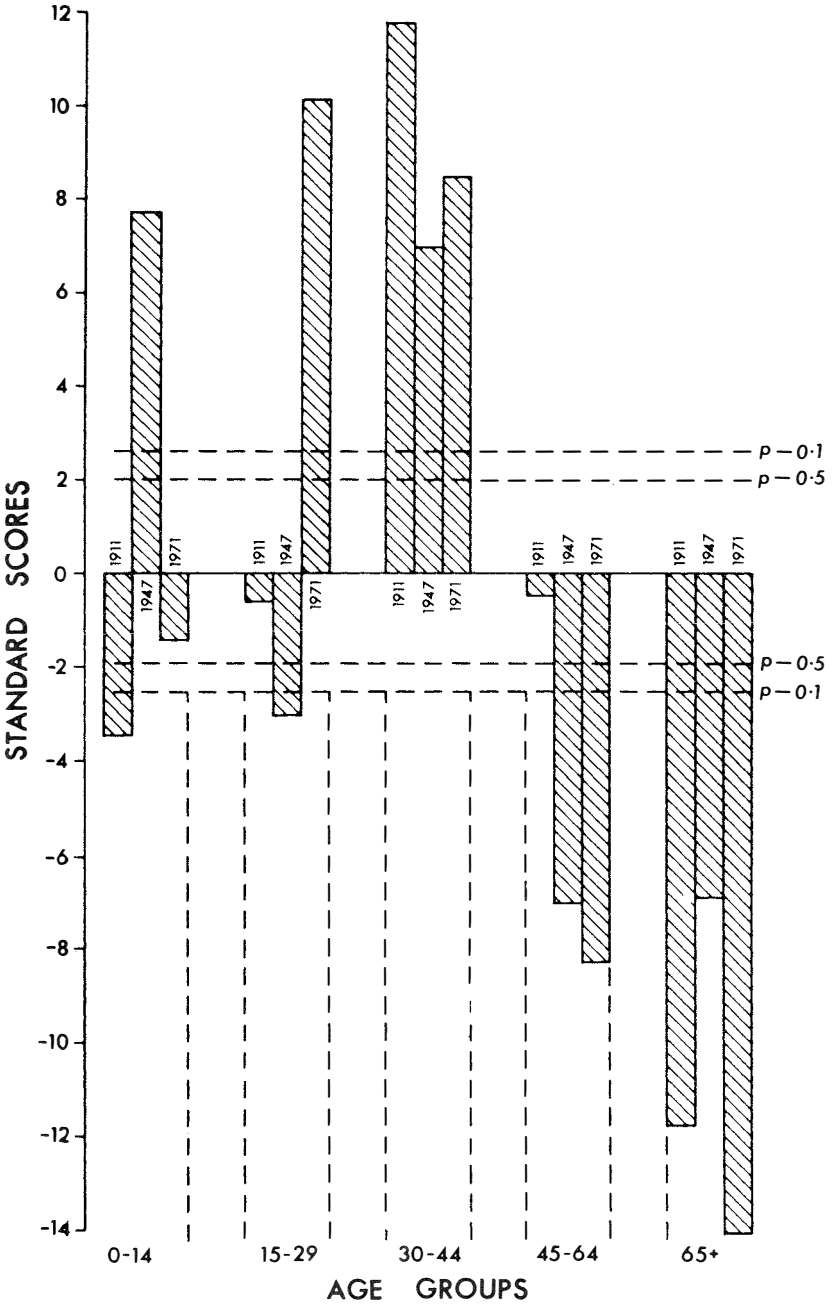

FIG. 11. - West Coast municipalities: 1911, 1947, 1971.
Deviation from State age-structure - males (standard scores).

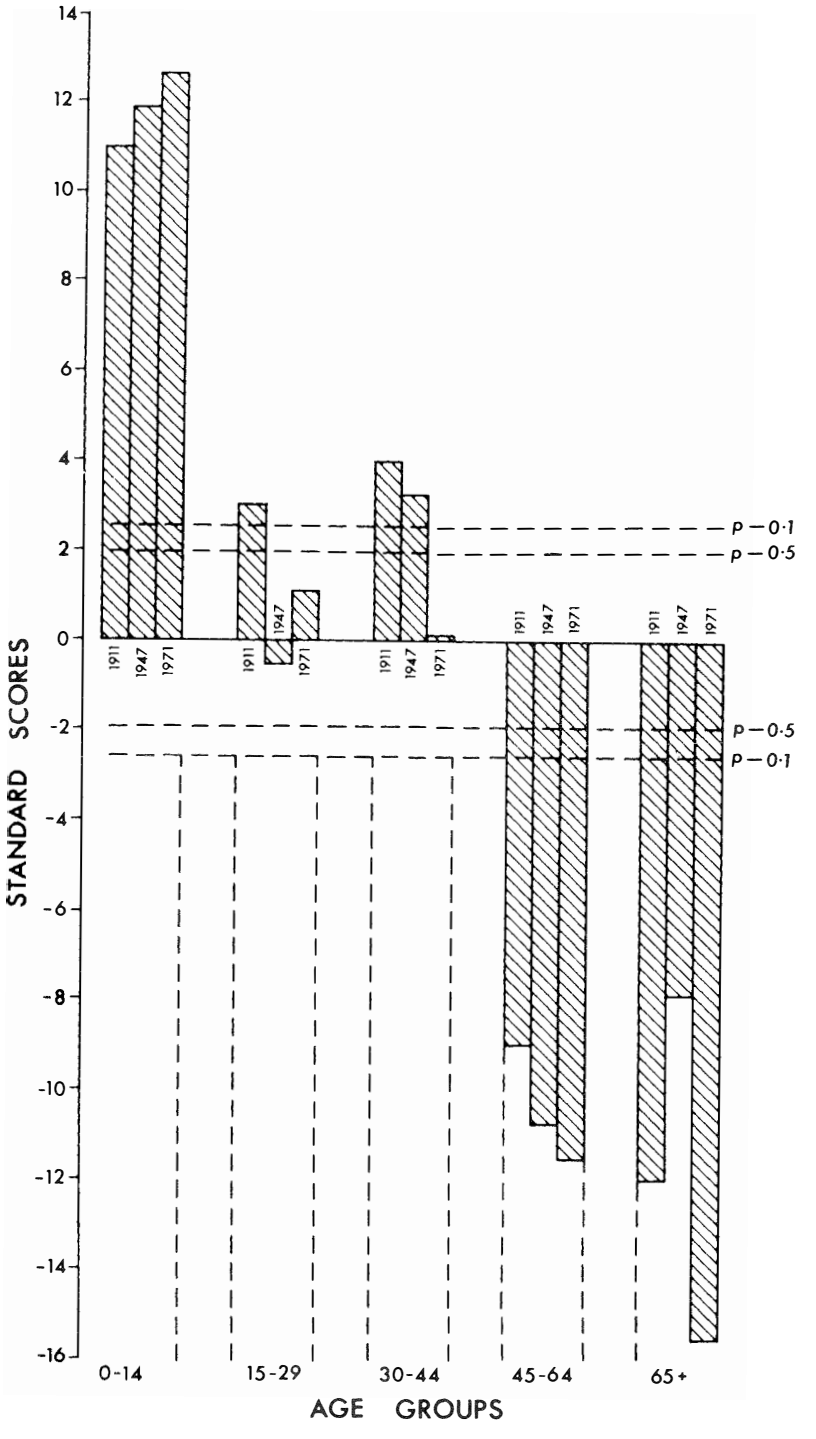

FIG. 12. - West Coast municipalities: 1911, 1947, 1971.
Deviation from State age-structure - female (standard scores)

migration eventually has an effect on the intelligence levels of the residual population is a question of some speculation. While the nature-nurture debate on intelligence is complex, Scott (1957) has demonstrated that there were clear regional differences in the intelligence of a cohort of school children in Tasmania. Rural areas generally had below-average test performance, while among the urban centres the intelligence scores of school children in the mining towns was generally slightly lower than the average service town.

Other basic aspects of the population structure reflect some of the problems of mining settlements. The high masculinity reflects the lack of job opportunities for women and the isolation commonly associated with mining towns. Isolation, a lack of services, and an imbalanced social structure undoubtedly contribute to a high labour turnover rate in the mining industry. They may also mean that personnel associated with other services, such as school teachers, may be more transient than normal and this may exacerbate any latent feelings of impermanence which are inherent in any mining settlement dependent on finite resources and fluctuating markets.

In addition to the relationship between socio-economic structure and the concept of social mix discussed earlier, the social structure of the population will also affect the ability of any community to provide, and pay for, community facilities. This assumption has been explicitly incorporated into several government studies in recent years of community needs. For example, the Australian Government Social Welfare Commission's study of community needs for family and childcare facilities used a principal components procedure to derive socio-economic scores from a number of census variables. These scores for each local government area in Australia were used to 'weight' information on the existing level of early childhood services to develop a scale of needs which could be used for funding purposes.

Of the West Coast municipalities, Gormanston, Waratah and Zeehan were given a rating of 1 on a 5 point scale. This indicated that they were areas of greatest need and priority in terms of daycare and childhood services. Strahan had a score of 2, but Queenstown's priority and needs rating was inexplicably not available (Social Welfare Commission 1975).

CONCLUSIONS

The history of settlement on the West Coast is one of the most colourful periods of Tasmanian history. The boom towns of the 1890s illustrate the influence that the presence of mineral deposits may have in rapidly altering the settlement patterns of any state. The history of towns like Zeehan, illustrates however, that 'boom' and 'bust' are equally associated with mining settlements. The rise and fall of mining towns reflects the tenuous positions they generally occupy, their growth ebbing and flowing on the tide of world prices and the discovery or depletion of resources.

The patterns of growth and decline in mining settlements, together with their physical isolation and relative lack of services and facilities, are reflected in the social and demographic structure of their populations. The population of the West Coast is still highly masculine and is characterised by an age-structure which differs sharply from that of Tasmania as a whole. Although the mining industry dominates the workforce, the West Coast supports a considerable range of occupational types. Job opportunities for women, however, are much more restricted. Questions of social mix, community needs and other social problems which arise from the structure of the West Coast population, its geographical isolation and the distinctive nature of its settlement, are subjects worthy of far greater consideration.

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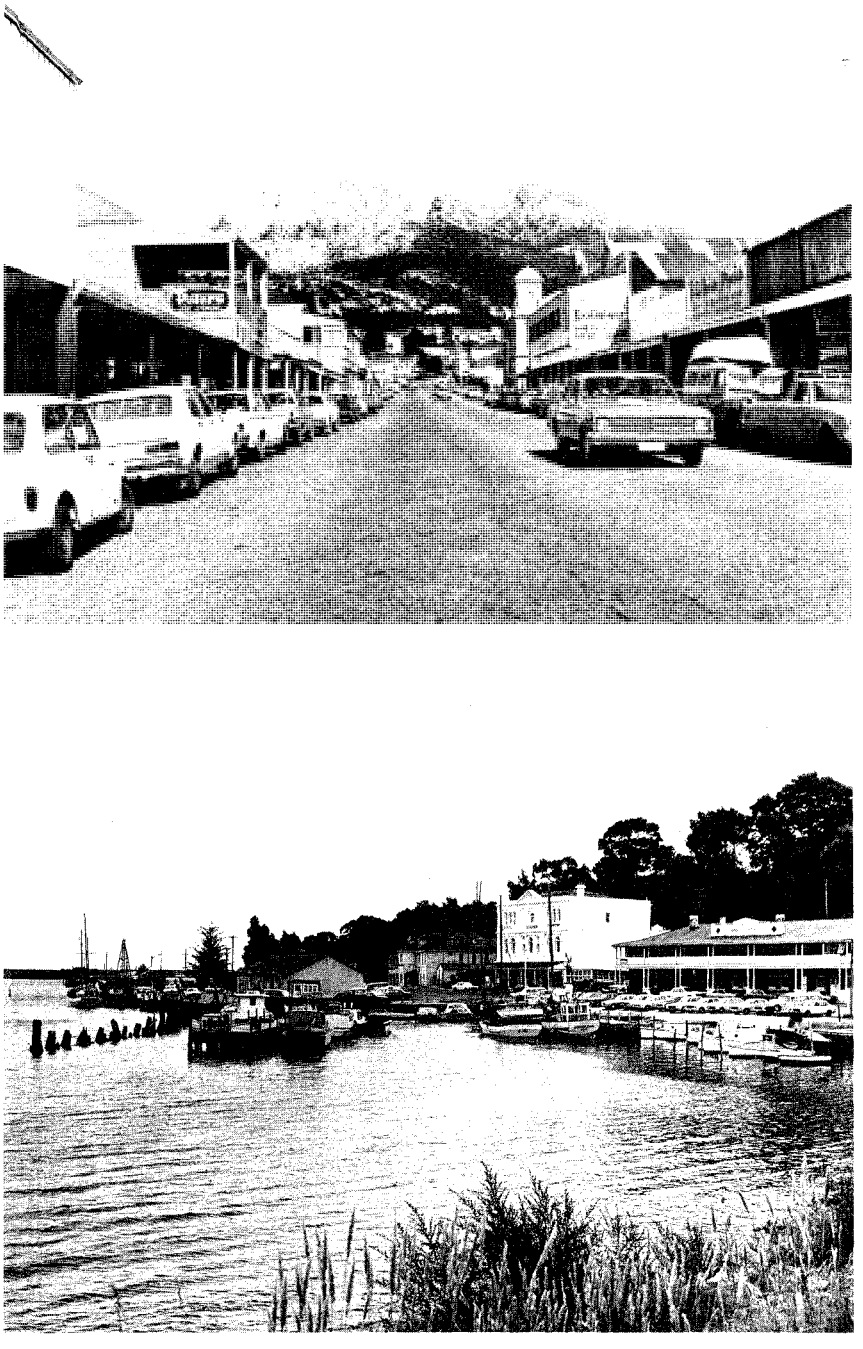

PLATE 19. - The main streets of Queenstown (above) and Strahan (below).