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THE SPATIAL DIFFUSION OF EXTRAMURAL STUDIES
WITHIN NEW ZEALAND

A thesis presented in partial fulfilment
of the requirements for the degree
of Master of Arts
in Geography at
Massey University

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ABSTRACT

The diffusion of the Extramural Studies programme within New Zealand is seen to have its genesis in the social space of the occupational structures from which the extramural population is drawn. Statistical analysis of data derived from an Extramural Questionnaire Survey of 2000 students during 1979 investigates the relationships between student standard characteristics, their reasons for study, their geographical locations and their sources of information. While the reason why people choose to study extramurally is clearly linked to non-spatial variables the outcome of their decision, however, is reflected in physical space.

By constructing a series of maps and related graphs at various levels of aggregation the diffusion patterns of total enrolments and selected subject enrolments are recorded at five-yearly intervals over the last two decades. Regression analysis, based on data for 1976, shows that although there is no significant relationship between distance from Palmerston North and total extramural enrolment, there is a positive relationship between population size and total enrolment.

Subject enrolments are tested by means of the Chi-square test at three different levels - between Islands, between regions, between counties and urban areas. These tests indicate that there are significant relationships between some areas and the number of enrolments in various subjects.

Although the study is able to describe both the spatial and non-spatial characteristics of the extramural population and to provide some explanation for the pattern of enrolments it cannot provide a basis for any detailed prediction of future regional enrolments. The degree to which these can be predicted is limited by the nature and size of the potential population of extramural students which in turn is dependent on social and economic trends in society.

At present, it can only be concluded that unless there is a major change in New Zealand's space-economy extramural enrolments will, in general, continue to coincide with the distribution of the national population.

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CHAPTER 1

SCOPE AND AIMS

Spatial diffusion is a dynamic process involving the spread of a phenomenon within a given area through time. The rate at which this takes place is dependent upon what is being diffused and will be influenced by a number of factors, e.g. physical, cultural, and political. Often, as in the present study, the course of diffusion is dependent upon human beings making individual decisions to adopt or reject an idea. Sometimes 100 percent diffusion will occur and entire areas will become saturated but more generally there will always be a part of the susceptible population who will continue to resist.¹

A typical adoption rate in the diffusion process is clearly shown in Figure 1-1. Casetti (1961) attempted to answer why diffusion processes conform to logistic trends when he suggested that S-shaped trends may be generated by diffusion models based on the following postulates:

- 1) That potential users of a technological innovation become adopters under the influence of previous adopters in the course of direct personal contacts.

- 2) That potential users have different degrees of resistance to change.

- 3) That resistance to change may be overcome by an adequate number of messages from adopters.

Interaction can therefore be seen as being basic to diffusion. Most of the pioneer work on modelling diffusion

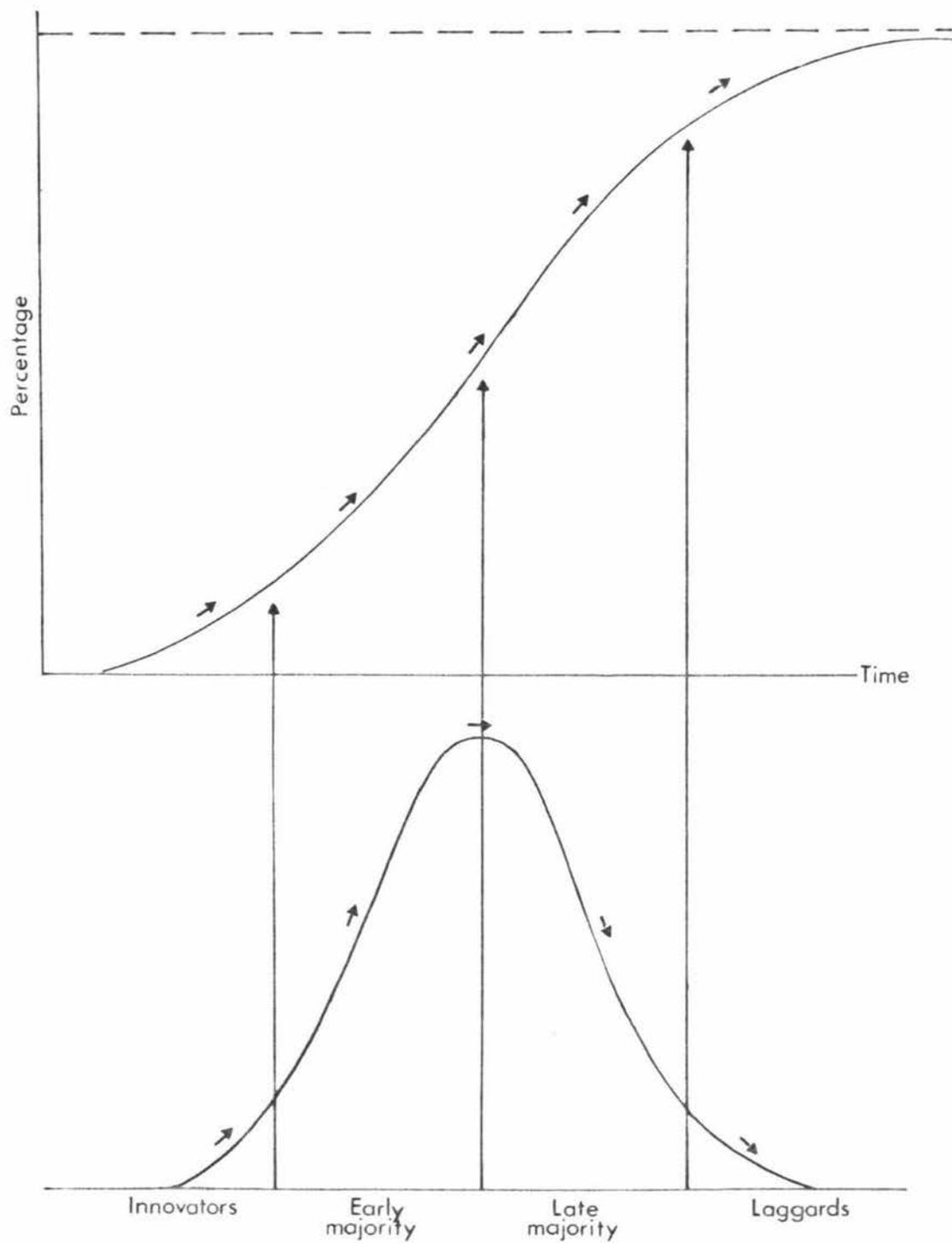


FIG. 1-1 Accumulating the Distribution of Innovation Acceptors
 Source: Gould, P., 1969: Spatial Diffusion, p.19.

processes comes from Sweden, where the spread of many innovations has been examined in considerable detail by Hägerstrand (e.g. 1952, 1953). Simulation models based on the changing probabilities of contacts and the varying rates of acceptance and resistance of innovations were also developed by Hägerstrand (1953, 1965). The Monte Carlo simulation technique has since been used by a number of geographers as the basis on which to build more refined diffusion models (e.g. Bowden, 1965; Colenutt, 1969; Morrill, 1965a).

Basically there are two main types of diffusion. The first, expansion diffusion, takes place when an idea is communicated by a person who knows about it to one who does not know thus increasing the total number of knowers through time (e.g. Hägerstrand, 1953). The second, relocation diffusion, takes place when a person moves from one place to another thus taking the idea with him. Such moves are made with different frequencies and over different distances. The stages involved in relocation diffusion are demonstrated, for example, by Brown and Moore (1969).

Other processes within these two basic types may also occur depending on distance factors. In contagious diffusion, for example, expansion is strongly influenced by the frictional effect of distance while in hierarchical diffusion distance influences become weakened as ideas and innovations 'leap-frog' over many people and places. Contagious diffusion, of course, always expands. Pyle's (1969) study of the diffusion of cholera in the USA in the nineteenth century, however, shows how contagious diffusion need not be only of the expansion type. Relocation diffusion processes may also be at work. Morrill's (1965b) work on the Negro ghettos

also demonstrates how once relocated, diffusion outward is nearly always in a contagious fashion, with new residences locating close to those of the cultural group.

In hierarchical diffusion it is relative distance and not absolute distance that is important. Pedersen (1970) found that the stronger the distance decay the closer diffusion followed physical distance, but the weaker the distance decay the closer diffusion followed the urban hierarchy. Berry (1972) argues that 'entrepreneurial innovations', in this case television transmitting stations, diffuse through the urban hierarchy in a regular manner. Although this may be the general impression it is important to define the nature of the hierarchy, whether in fact the information networks are uni-directional in flow or whether the flow may be in more than one direction. When flow is defined as being in more than one direction then the whole hierarchical pattern becomes more flexible, for although the largest and most important centres or organisations, for example, may adopt first it is possible for the hierarchy to have a number of 'break-points' where diffusion branches out to some smaller centre. In this way places of lesser importance may often adopt an innovation before some places of greater importance.

Hägerstrand's (1965) study on the diffusion of Rotary Clubs in Europe, Bell's (1965)² study of the diffusion of radio in the USA and Girling's (1968)³ study of the diffusion of banking in the USA all show how the major urban linkages which structure geographic space often control the initial patterns of adoption before contagious effects take over and blur the hierarchical pattern. Thus the hierarchi-

cal process appears more important in the earliest years, while the contagious process assumes greater control once the basic patterns are established. This idea is developed by Hägerstrand (1952) in his investigation of the diffusion of automobiles in Skane, Sweden, when he conceptualises the diffusion process as a 'wave of innovation'. The notion of an innovation wave definitely helps in the understanding of why innovation pulses across a landscape tend to lose their strength as they move away from their point of origin.

Thus, where a population is fairly homogeneous and distance effects are strong diffusion will most likely be of a contagious nature. Hierarchical diffusion becomes more common, however, when the effects of distance change the probabilities of interaction. As communication between distant places is reduced the diffusion of ideas becomes warped and channelled into the urban hierarchy. Pred (1967), in his postscript to Hägerstrand's 'Innovation Diffusion as a Spatial Process', concedes that the core of the thesis on the geographical dissemination of innovations is identical to that for the spatial patterns of human migration. One should view geographic expressions of human behaviour, whether they aggregatively reflect patterns of movement or spatial distributions, in terms of the information available to the decision-maker (migrant, adopter, firm etc.) and these can then be analysed in terms of the 'social-network' of interpersonal communications through which the information circulates (Pred, 1967).

Every spatial diffusion situation contains the following six basic elements:

- 1) An area or environment in which the process occurs.
- 2) Time, which may be either continuous or differentiated into phases.
- 3) The item being diffused.
- 4) Places of origin.
- 5) Places of destination.
- 6) Paths of movement, influence or relationship between the origin places and the destination places.

The spatial component of the diffusion process is dependent, however, on the particular type of innovation. Morrill and Manninen (1975) suggest the following variables as being critical in generating space-time outcomes:

- 1) The innovation.
- 2) The susceptible population.
- 3) Distance and space.
- 4) The information network controlling spread.
- 5) Limited origins and individuals.
- 6) Time.
- 7) Feedback processes.
- 8) Uncertainty and the degree of choice in decision making.

The value of these parameters can be seen in the development of this thesis where several modes of diffusion operate simultaneously and with varying intensity, for interaction does not occur in isolation but is generated by the particular forces of complementarity, intervening opportunities and transferability (Ullman, 1956).

Studies of the spread of innovations thus appear to have generally developed two broad themes. Either they

have examined the spatial and temporal patterns of the spread of innovations at the macro-scale (e.g. Brown, 1968a, 1968b; Brown and Cox, 1971; Hägerstrand, 1952, 1953, 1966; Hudson, 1972; Morrill, 1968), or they have looked at innovation at the micro-scale. At the latter level research has tended to concentrate on the adoption process (Emery and Oeser, 1958; Katz, 1957; Kivlin and Fliegel, 1967; Rogers, 1962; Rogers and Shoemaker, 1971).

The present study is concerned with the spatial and temporal patterns of the spread of Extramural Studies in New Zealand. Change through time is an essential characteristic of place and different rates of change in different places constitute a major spatial variable. The idea of external study from a university is not new; neither is the idea of correspondence study as a means to formal education. What is new is the fact that Massey University became New Zealand's official University for administering scheduled programmes of work at both the Degree and Diploma levels to those students wishing to study externally. An already existing internal programme became the basis for the external programme. In this way the University did not bring about an innovation in terms of the actual programme, but rather it innovated in terms of the procedure of the programme. Extramural Studies can thus be defined as a procedural innovation.

EXTRAMURAL STUDY - AN HISTORICAL PERSPECTIVE

Since its inception in 1960 the Extramural Department has grown from a total of some 500 students to well over 6000 students in 1979. In 1976 Extramural enrolments exceeded the University's internal roll for the first time

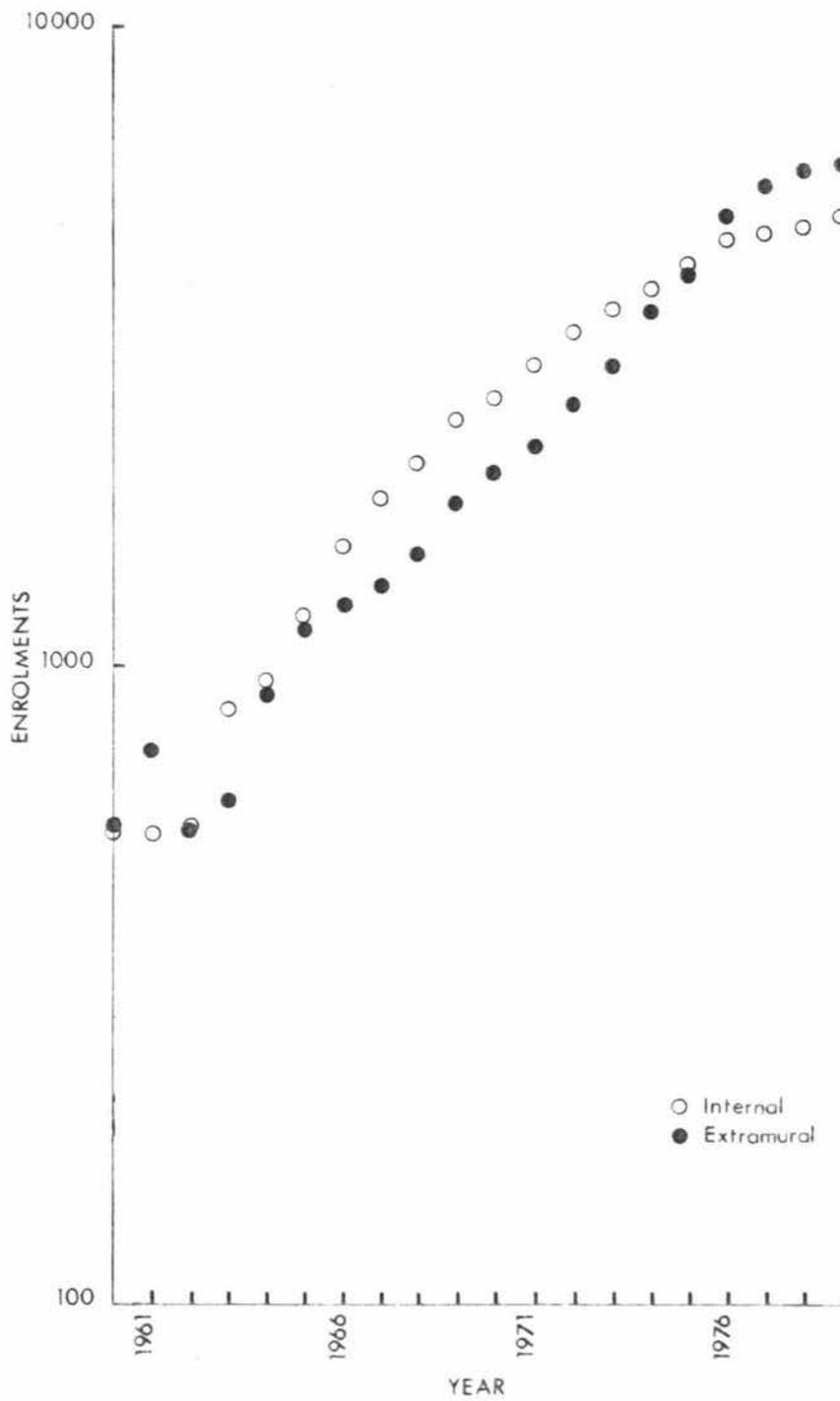


FIG. 1-2 Student Enrolments - Massey University

since 1962. The pattern has continued. Over the 1978/1979 enrolments there has been, on average, a thousand more extramural students than internals (Fig. 1-2). The reason for this is that Massey University has national responsibility for the provision extramurally of university degree and diploma courses. This is the result of a decision of the Academic Board in 1958, 'that an establishment for extramural studies in one place for the whole university system is desirable' (N.Z. Vice-Chancellors' Committee, 1974, 78). Within the total New Zealand university system extramural enrolments have risen from 3.7 percent of total university enrolments in 1960 to 12 percent in 1979 (Appendix A). The most significant changes have occurred during the mid 1970s at a time when social change among adults has been most prevalent and Figures 1-3 and 1-4 clearly demonstrate the importance of the availability of Extramural Studies.

Part-time study has always been a significant factor in the organisation of New Zealand universities. Since 1874 there has been opportunity to enrol for a degree and to study at a distance without the obligation to attend regular classes. University teachers, however, were not in favour of the practice for they considered extramural study to be, at best, an inadequate substitute for full-time study at a university centre (N.Z. Univ. Committee, 1959). Much of the early discussion on those involved in Extramural Studies revolved around the teaching profession. In 1925 the Reichel-Tate Commission suggested that teachers should be trained within the university. This was contrary to educational policy, however, for by this time the training

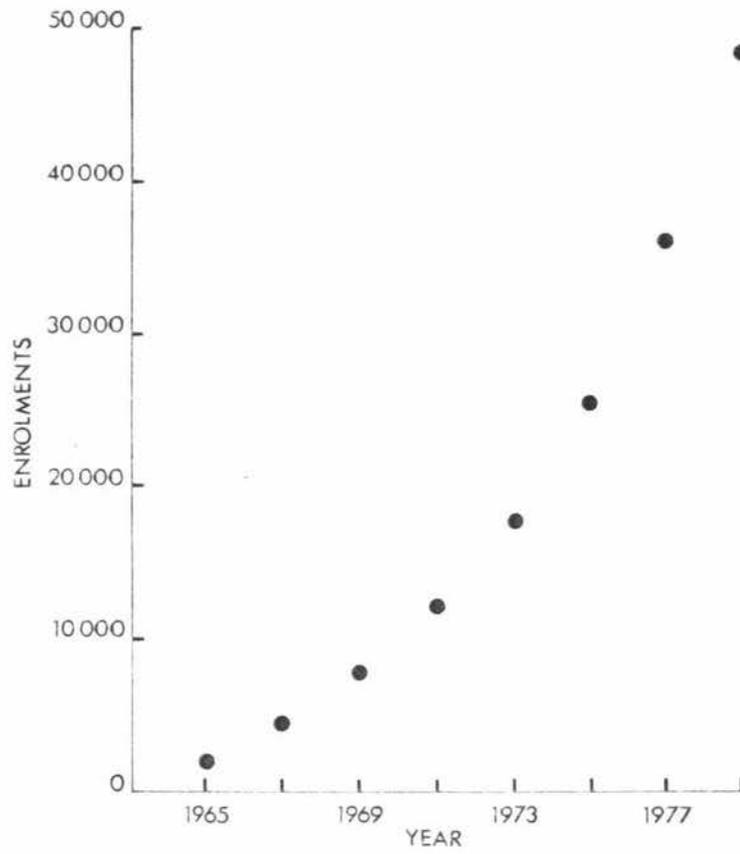


FIG. 1-3 The Cumulative Growth of
Extramural Enrolments

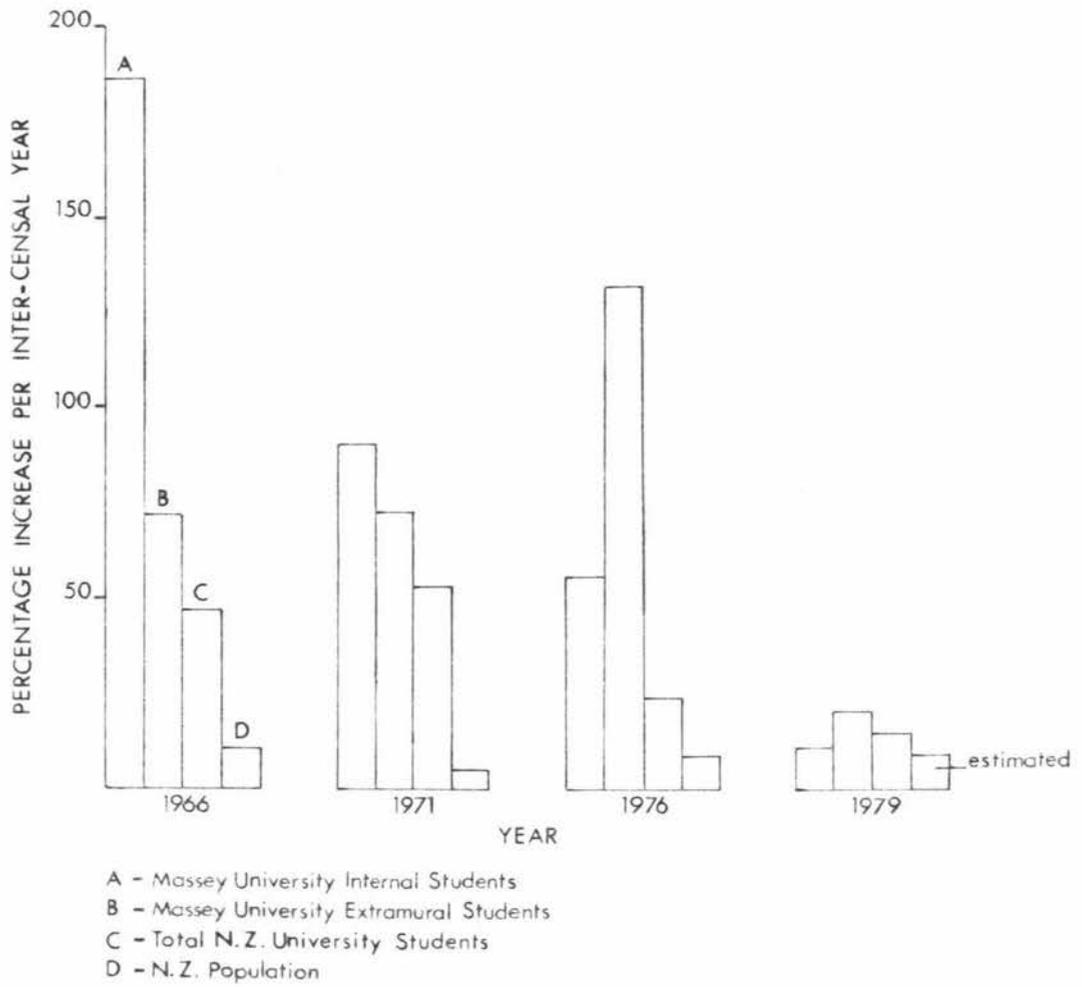


FIG. 1-4 Comparative Growth Rates

colleges had assumed responsibility for the training of both primary and secondary school teachers and only a minority of students were allowed to undertake concurrent part-time university study.

The New Zealand Educational Institute first raised the question of a degree in education in 1928. Later it was raised by the Auckland Professorial Board but university teachers of education were opposed to a B.Ed degree. There was neither the availability of staff nor facilities and they themselves were quite satisfied with the established provision of the B.A., B.Sc., and the Diploma in Education. If the recommendations made in the Atmore report of 1930 had been substantiated teacher training in New Zealand would have been revolutionised. Teacher training colleges in the four main centres, together with their buildings, equipment and staff would have been handed over to the university colleges and the result would have been university schools of education producing graduates with their degrees in education.

In 1949 the Academic Board proposed to abolish the practice of allowing candidates from outside the university centres to sit for final examinations if they had not attended lectures and Senate agreed that extramural study should not be allowed for B.A. and B.Sc. courses beyond Stage 2 as from 1951. The NZEI reacted strongly to this proposition for they considered that teachers were being discriminated against. In 1948 there were 916 exempted students in the Arts faculties (Parton, 1979). Many of these were teachers who had begun their courses as internal students but were prevented from continuing their internal study by the de-

mands made on them by the teaching service. The NZEI therefore put forward several practical suggestions including the idea of one of the constituent colleges accepting responsibility for all exempted students and thus providing a national coverage in a core of subjects.

It was not until 1958 that a compromise was finally reached. Initially Victoria University accepted responsibility for all extramural students but following Government's agreement to the establishment of a branch college at Palmerston North the new college was provided with the dual responsibility of providing internal and extramural tuition.

In 1960 five first-year subjects were offered in Education, English, History, Applied Mathematics and Pure Mathematics. No differentiation between the courses offered to internal and to extramural students was made, either in content or standards or work to be achieved. Both groups were taught by the same lecturers and took the same final examination at the same time. Only the mode of teaching was different. The principle has continued. As technology has developed so had the variety of teaching materials but the basis is still the carefully constructed reading guides, supplementary notes and an extensive programme of written assignments which replace the lectures and classwork given to internal students. Residential vacation courses, mandatory for some papers, voluntary for others, and the provision for lecturers to visit various area groups throughout the year has become an integral part of the programme.

THE PARTICIPANTS

Why does a person elect to study for a degree or diploma

by correspondence? Superficially the most obvious reason is the absence of an institution capable of providing face-to-face tuition in the subject he wishes to study. This suggests that correspondence education should flourish in the countries with widely scattered populations (Wedell, 1970). In the argument for the development of an Extramural Programme in New Zealand this could, in part, be claimed. In the early 1960s over half the country's primary schools were in rural areas with many others in small provincial towns (Freyberg, 1970). Teachers in these areas had to be catered for.

In 1960, 89.46 percent of the extramural students came from outside the university centres. Teachers accounted for 60.24 percent of all those enrolled. There was, however, an administrative requirement built into enrolment regulations in order to safeguard the position of the four universities who envisaged that their rolls could be at risk. Students were required to enrol and to be exempted from lectures of the University in whose district they resided.⁴ Students living in Palmerston North or within a reasonable distance of Massey University (i.e. 25kms) are normally expected to enrol internally while those living within the metropolitan area of another University are normally required to attend lectures as internal students at that University. Students who wish to be exempted from these general requirements need the approval of the University concerned. University internal rolls have not suffered because of the availability of extramural study through Massey. What has occurred has been an overall decrease in the number of part-

time students on the various university rolls as these students have taken advantage of, and have been absorbed into, the Extramural Programme.

A change has also taken place in the composition of extramural students. Whereas in 1960 males accounted for 79.5 percent of total enrolments by 1979 the pattern had reversed and females accounted for 59.8 percent of total enrolments. Not only has the sex structure changed but also the occupation structure has widened. With the introduction of a wider range of courses over the years, occupations other than teaching have found the courses offered valuable. Thus, whereas in 1960 teachers accounted for 60 percent of total enrolments by 1979 this had dropped to 34.5 percent. This can partly be accounted for by the structural changes within the education system itself. Many more teachers are now leaving the Teachers' Colleges with the necessary university qualifications to give them a Diploma in Teaching at the time of certification. The demand created by the backlog of teachers wishing to complete degrees in those early years has now been met and the demand from older teachers wishing to obtain a Diploma in Teaching has changed.

Such changes in the composition of students also bring about changes in demand for the various subjects offered. Although subjects are open to all students certain fields will have a greater propensity to attract males and vice-versa. Obviously, this can be equated to occupational structures but very often there is the perceived idea that certain subjects are more suited to women than men and so on. The very manner in which people perceive their need for further

education is part of the subject selection process. Extramural study has meant that many more people who are in mid-career can take the opportunity to pursue university study. The Diploma courses, in particular, have opened the doors to the prospect of a qualification completed totally extramurally and within a relatively short, two to three years, time period. Diploma programmes in business, management, training and administration and health have no internal market (Bewley, 1978). In these courses there is the need to combine both theory and practice, therefore study needs to interact with experience in the field. The ideas that the student gains from his University course can be immediately implemented in the widest possible sense. At the same time a more critical appraisal of the course content and structure may be made.

Although the Diploma in Education may be taken both internally and extramurally it, like other Diplomas in the Social Sciences, finds its largest clientele among the workforce. The Diploma in Social Science in Geography, for example, has been specifically designed for practising teachers. Its main aim is to bring geography teachers in the service up to date with new movements within the discipline. Another example is the Diploma in Second Language Teaching. Here demand may well fluctuate with the arrival of immigrants. It is, however, generally considered that at least two generations need second language teaching. Teachers in inner city schools, in particular, need to acquire skills in the teaching of a second language.

Furthermore, extramural study means that no longer is

a person trained for life in one or other of the tertiary institutions. The professions, particularly the developing ones such as nursing, no longer belong exclusively to one institution or another (Bewley, 1978). With the University offering courses in professional studies a student may now move at different stages between institutions. Each will have its specific part to play in the enhancement of a career structure for any one individual. Hence, as the University has expanded its programme and subjects have been diffused throughout New Zealand it would seem conceivable that some will have more relevance in certain geographical areas than others.

AIM

The aim of this thesis is to establish those factors within the diffusion process of Extramural Studies within New Zealand which are influenced by, or have influence on the geographical distribution of enrolments. As a correspondence course it may be assumed that Extramural Studies is aspatial and that all parts of New Zealand have equal access to the programme.

The concept of aspatialness is examined by testing a number of hypotheses related to the geographical, temporal and physical accessibility of students. The research hypotheses are divided into two major groups, those related to total enrolments and those which are related to subject enrolments. The major hypotheses related to total enrolment are:

- 1) That there is a positive relationship between population size and enrolment.

2) That there is a negative relationship between distance from Palmerston North and enrolment.

Key variables relating to a person's location, age, sex, socio-economic status and his reason for studying extramurally are also examined.

The major hypotheses related to subject enrolments are:

1) Between areas there will be a difference in the proportions of students enrolled in certain subjects.

2) Proportionately more students in the urban areas will enrol in the applied subjects, while students in the counties will enrol in the traditional type subjects.

Key variables relating to the occupational structure of students within and between county and urban areas are also tested.

The thesis is exploratory in its application. The Extramural Studies programme as it is administered by Massey University is unique. Overseas research on similar programmes, although providing a useful comparison from the educational point of view, does not examine student enrolments in terms of geographical accessibility factors. When it does (e.g. Thomas, 1974; Wedell, 1970) it is peripheral to, rather than central to, the core of the subject. It is the purpose of this study to make the geographical factors of the diffusion process central to the discussion. Thus the spatial concept is taken as the core of the subject and the basic tenets of geographical diffusion theory are used to examine the hypotheses.

FOOTNOTES

- 1 The term 'susceptible population' is taken from the epidemic model of diffusion and refers to the potential adopters of an innovation.
- 2 Bell, W., 1965: The Diffusion of Radio and Television Broadcasting Stations, Master's Thesis, Penn. State University. Quoted in Gould, P., 1969: pp 8-9.
- 3 Girling, P., 1969: The Diffusion of Banks in the United States, 1781 to 1861, Master's Thesis, Penn. State University. Quoted in Gould P., 1969: pp 58-59.
- 4 University Districts: New Zealand was originally divided into four districts or zones. These acted as catchment areas for student enrolments. The establishment of Massey University and the University of the Waikato has cut across these but each of the four original universities still maintains within its constitutional schedule the delineations of its original district. They are as follows:
 - 1) The Auckland University District comprising the Provincial District of Auckland and the portions of the Counties of Waitomo and Taumarunui which are within the Provincial District of Taranaki.
 - 2) The Wellington University District comprising the Provincial Districts of Wellington and Hawke's Bay, the portion of the Provincial District of Taranaki which is not within the Counties of Waitomo and Taumarunui, and the portion of the South Island comprising the Counties of Collingwood, Takaka, Waimea, Murchison, Sounds, Marlborough, and Awatere, and the cities, boroughs and town

in the said counties in the South Island.

3) The Canterbury University District comprising the area in the South Island bounded on the north by the northern boundaries of the Buller, Inangahua, Amuri, and Kaikoura Counties, and on the south by the northern boundary of the Land District of Otago.

4) The Otago University District comprising the Land Districts of Otago and Southland.

CHAPTER 2

METHOD

All the data used in the examination of this study are taken from the University Statistics on Enrolments, the Extramural Department's Area Lists of student enrolments, and the New Zealand Population Census Statistics for 1961, 1966, 1971, and 1976. Where other sources have been used these have been acknowledged accordingly in the text.

Area Selection

The 'geographic' areas into which Extramural students are classified were rationalised some 15 years ago. All students were asked to indicate their examination centre preference and naturally the majority elected to go to their nearest centre. On this arbitrary basis the area boundaries were established and have been enforced ever since (Fig. 2-1). Because these boundaries do not coincide with Statistical boundaries analysis using Census data was impossible. All the Area Lists were thus required to be recoded in terms of the 1976 Census specifications for boroughs, cities, and counties.

The classification was kept at a high level of disaggregation allowing for detailed analysis within and between areas. To facilitate data manipulation some modifications were made to the 1976 Census classification. A decision was made not to work with Urban Areas owing to their fragmentation of the county structure. Urban Areas have no administrative

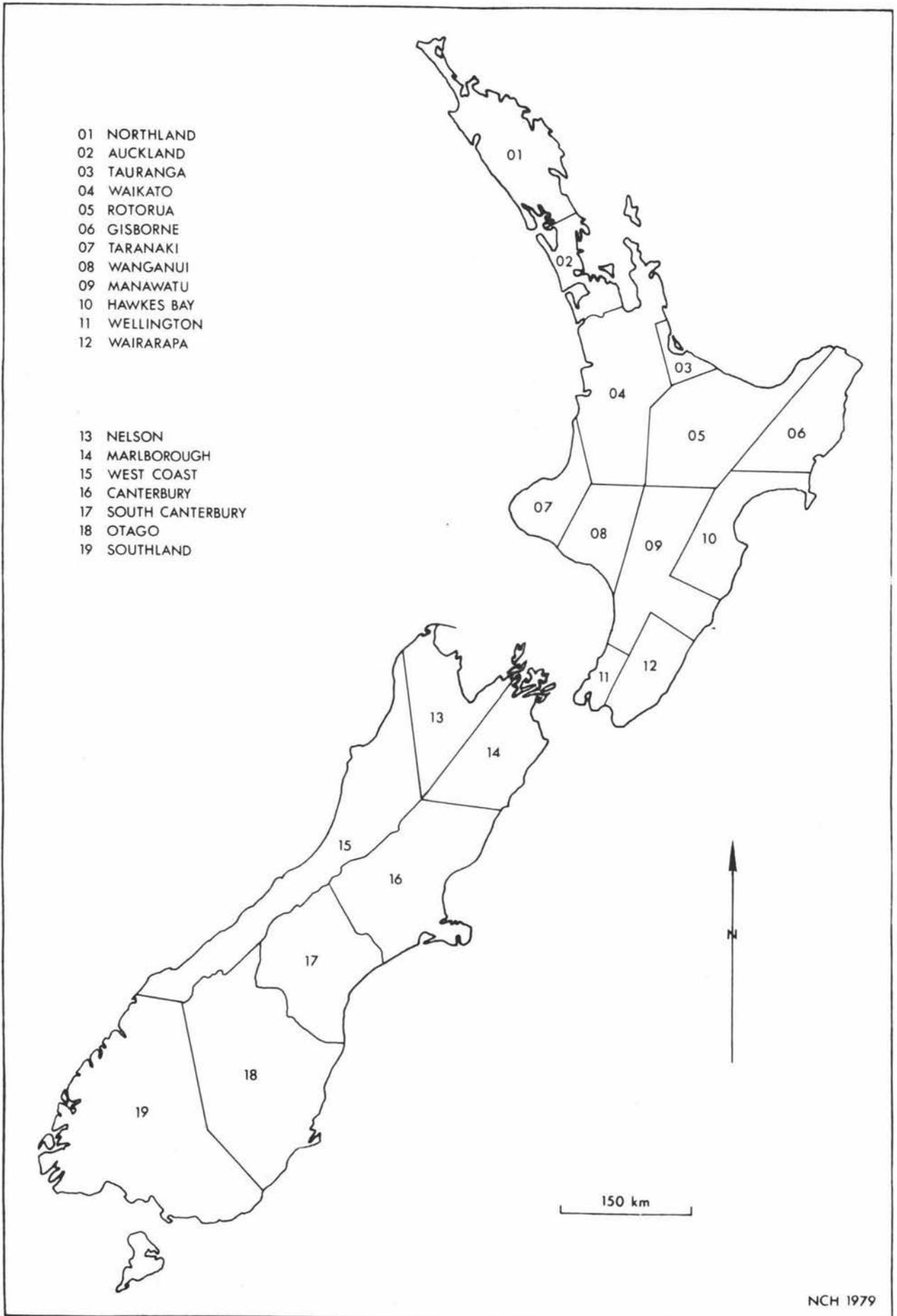


FIG. 2-1 Extramural Area Boundaries. Source: Massey University

function; rather they embrace areas of unified community, economic, and social interests. Thus, in addition to the central city or borough, Urban Areas include neighbouring boroughs and town districts and parts of counties which are regarded as suburban to the centre of population. A classification comprising two main divisions: (1) cities and boroughs, and (2) counties, which could be aggregated at a later stage was devised.

The first division comprises all cities and those boroughs with populations of 10 000 or more (Fig. 2-2). Since this classification had to be established from the students' postal addresses certain problems had to be overcome. In the metropolitan areas codes, rather than specific boroughs, had been given. Thus, for Auckland the seven cities and all the metropolitan boroughs were aggregated; for Christchurch, Christchurch city, Riccarton and Lyttelton boroughs were aggregated, while for Dunedin, Dunedin city, Green Island, St. Kilda and Port Chalmers were aggregated. The four urban areas which make up Wellington were not combined initially thus enabling a more detailed analysis of specific areas within it to be carried out. The boroughs of Eastbourne and Petone were, however, aggregated with Lower Hutt city. Two further aggregations were carried out; Mt. Maunganui borough and Tauranga city were aggregated and Havelock North borough¹, because of its proximity to Hastings and the degree of interaction between them, was aggregated with Hastings city.

The second division comprises all administrative counties as given in the Census. Incorporated into the county in which they are located are those boroughs with



NCH 1979

FIG. 2-2 Urban Areas

populations of less than 10 000 people and all Town Districts. The Thames-Coromandel District was also designated to this group (Fig. 2-3). Here, addresses given as a Rural Delivery code presented another problem. Post Offices have been responsible for delimiting their own rural delivery zones and consequently there is no national map, or pattern, from which one can establish where rural delivery codes overlap counties. Where possible individual Post Offices were consulted. For some areas there was little problem but two South Island counties - Heathcote and Waimairi - finally had to be aggregated with Christchurch. The Chatham Islands County has been retained, although for administrative purposes the Extramural Department regards it as an Overseas posting.

So that any situation giving rise to change between Census years could more readily be identified all students were allocated area codes over the entire 20 year period. A change in a student's code meant that diffusion processes were more precisely identifiable.

Census Material Selection

In order to keep the size of the data set to manageable proportions and because statistics were required which could not be based on estimations it was decided to look at the Census years only. Enrolment data for 1961 were, however, incomplete. As the data for the base year (1960) were available from Victoria University, Wellington, it was decided to collate these with the 1961 Census data on the premise that there was little significant difference between the two years. The remaining years, 1966, 1971, 1976, gave the progression into the second decade of the Extramural programme.

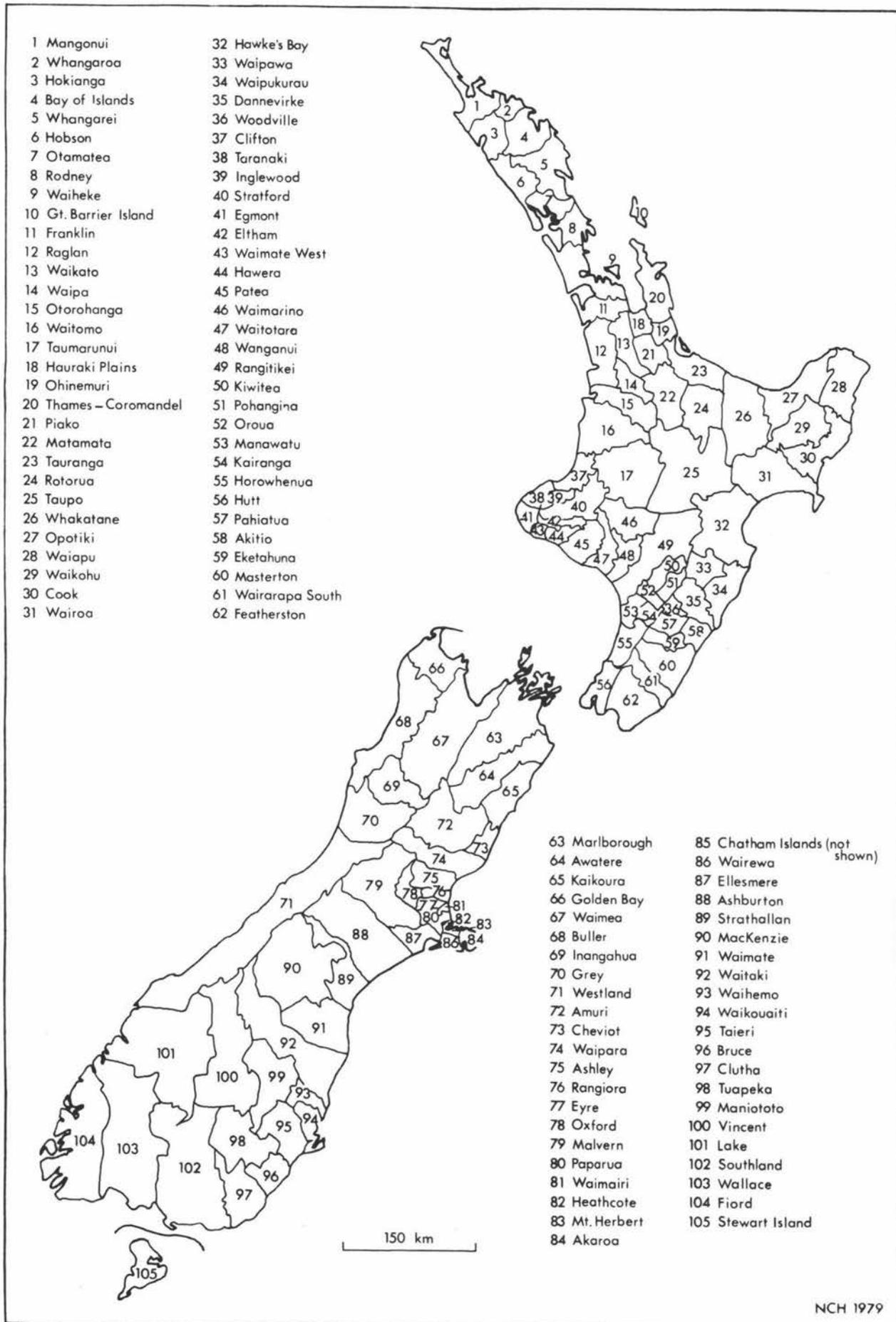


FIG. 2-3 Geographical Counties. Source: Local Government Commission - 1973 - adapted

For these four time periods the changes in population, age structure, occupation and tertiary education qualifications were examined. The format in which Census material was published during this period changed considerably. Also, numbers of changes were made to urban and county boundaries while new boroughs were created. All of these changes and amalgamations had to be accounted for and rescheduled into the 1976 Census framework. The populations for two areas, that of Rodney County and Kapiti Borough are, for lack of sufficient detailed figures, still only approximations for the year 1961.

The majority of extramural students are older than their internal counterparts. The susceptible age-grouping was set at 20 to 60 years, allowing for some enrolments on either side of this. As the 1976 Census data disaggregations were unavailable ages were grouped from 20 - 29, 30 - 39, and 40 - 59.

In the early years most students came from occupations related to the teaching profession. The occupational structure of students however has broadened. In 1970 the International Standard Classification of Occupations (ISCO) was adopted and modified to suit New Zealand conditions. Because of the changes in the adoption of the new classifications, comparisons between groupings of the 1971 and earlier census results could only be made with caution (Dept. of Statistics, 1971). In the light of this only 1971 and 1976 figures were recorded for the first three major groups, i.e. Professional, Technical and Related workers; Administrative and Managerial workers; and thirdly, Clerical and Related workers.

Figures for Tertiary Education aggregates were less obvious. After 1921 no question on education was included in the New Zealand Census until 1966 when information on years of attendance at school and university, with qualifications obtained, was elicited. In 1976 the information was broadened, although the compilation is to some extent limited because only the highest qualification is coded.² Only 1976 figures have been used and all tertiary qualifications were combined and recorded as a male/female category.

Subject Selection

To attempt to cover the entire range of subjects offered to extramural students was beyond the feasibility of a Masterate thesis. A selection, therefore, had to be made. The procedure was not easy as a number of factors had to be considered. Many subjects have restricted intake. While from an administrative point of view this means selection from a student-user point of view it means that potential needs may not be met. Restriction requirements on individual papers may change from time to time and in some Departments there is a policy of offering certain papers in alternate years only, thus creating an 'off-on' effect. On this basis each subject and individual paper has to be assessed on its own merits. Generalisation becomes impossible as administrative detail overrides student potential.

Geographic inquiry into subject growth and distribution, however, requires one to work with cells which are large enough for some form of empirical analysis to be carried out. If one is to compare subject growth rates and to predict growth trends, whether spatially or not, then one is con-

strained in the choice of subjects simply because very few subjects have totally unrestricted intake. The thesis is not designed to be a case study. Neither does it purport to acknowledge all the finer administrative detail. What it does hope to achieve is to give a broader understanding of the dissemination of Extramural Studies through an examination of selected subject groupings and to do this, one must make generalisations.

The subjects chosen for analyses had to satisfy certain criteria:

- 1) They had to contain as few restricted papers as possible.
- 2) They had to cover a broad degree/diploma structure.
- 3) They had to cover varying time periods.
- 4) They had to represent each of the following categories:
 - i) Large roll numbers.
 - ii) Medium roll numbers.
 - iii) Small roll numbers.

Subsequently, the following subjects were chosen: Business Studies, Education, English, Geography, History and Modern Languages (Appendix B). In each subject papers were aggregated for each level so that discussion is based on a single level or combination of levels.

THE AGGREGATE DATA SET

The need to obtain representative samples of reasonable size and to accumulate data over time resulted in the decision to work with frequencies based on the entire extramural population in selected years (p.31). The manner in which sub-

ject frequencies was arrived at needs some explanation, as in most instances total subject frequencies do not match overall enrolment frequencies. For overall enrolment students could be counted only once, but in total subject enrolments, because of concurrent enrolment at different levels within subjects, students could be counted more than once. Calculation of subject frequencies was based on the following method. Each subject level was recorded separately. Where the student was found to be doing more than one paper at the same level the subject was calculated as being diffused once at that level, (e.g. Student A is taking 48.101 and 48.102. The frequency is calculated as 1 at 100-level). Where a student was taking papers at different levels each level was taken as being diffused once while the total subject frequency was calculated as three, (e.g. Student B is taking 36.131, 36.231, 36.602 and 36.605. The frequency count is 1 at 100-level, 1 at 200-level, 1 at 600-level, but 3 for total frequency indicating that the subject has been diffused at three levels). This means that although at the disaggregate level each frequency can be matched to a student at the aggregate level it cannot, for the aggregate level is measuring the magnitude of diffusion within the subject.

The advantage of presenting data in this fashion is that distribution patterns on a number of scales can be portrayed. The disadvantage basically rests on the fact that because frequencies rather than codes are used there is no way of distinguishing between the total subject and total student diffusion.

Thus the final computer file was a composite of three

sets of data:

1) The Census years where the records contained the geographical area code, the year, total enrolment frequency, subject level enrolment frequencies, census data and straight line distance from Palmerston North.

2) The subject base years (if these were not Census years), where the records contained the geographical area code, the year, the subject level enrolment frequency in the subject for which it was the base year only.

3) The current year (1979) where the record contains the geographical area code, the year, total enrolment frequency and subject level enrolment frequencies.

Four sets of crosstabulations based on Area by Year were computed. The first was a series of crosstabulations for total enrolment and subject level enrolments. The second gave the total enrolment in each subject while the third and fourth gave subject totals for males and females respectively. Together these provided the working base for the compilation of the maps and related graphs. This file was also used in carrying out the functions of ranking, regression analysis, and significance testing as described in Chapters 4 and 5.

THE INDIVIDUAL DATA SET

A questionnaire makes it possible to obtain information about individuals and to group them according to the needs of the thesis. It also permits testing of hypotheses on individualistic data. The questionnaire (Appendix C-1) was, therefore, designed to provide not only further statistical data but also to allow the respondent to express some per-

ceived judgements. Thus, although much of the information had been given at the time of enrolment, other variables (e.g. reason for study, method by which information about Extramural Studies is disseminated, and distance and travelling time from nearest university) allowed for greater flexibility in the testing of the hypotheses.

A computer generated random sample of 2000 was drawn from the 1979 enrolments. A problem, however, is always likely to occur when such a method is applied at some date subsequent to initial enrolment. Although some withdrawals had been anticipated their extent was not fully realised until the Extramural Department's updated mailing list became available. Four hundred of the 2000 students randomly selected were found to have withdrawn. The problem of obtaining responses from students who no longer had a definite committal to Extramural Studies then had to be considered. This also raised the question of whether the distribution pattern of withdrawals was also random. A check found that the ratio of the South Island to the North Island was 1:4.5 which was very similar to that for enrolment (1:4.1).

The cost factors, both in terms of money and time, had to be considered. Finally, one had to consider whether, in fact, the responses given by the withdrawees would be significantly different from those of the remaining extramural population. On this basis it was decided to redefine the population and to include only the current student enrolment (July, 1979). Although there would obviously be some differences it was felt that these would be sufficiently small and random enough not to significantly affect the overall pattern. Once the random sample was established

each of the students was assigned a code number. This included their sample number, their area code and their enrolment year. The code was then written onto the questionnaire as well as a check-off list so that response rates could be accurately assessed.

The questionnaire was mailed to the students concerned together with the Extramural Newsletter which included a brief review of the purpose of the survey (Appendix C-2). All the envelopes had to be manually sorted and the questionnaires inserted before Departmental staff could carry out their usual mailing procedures. Reply paid envelopes were not included - a practice which is generally used when surveying extramural students. The time of posting was also late into the second term when many students were heavily committed to meeting assignment deadlines as well as their occupation and family commitments. The questionnaire was so designed, however, that it could be quickly answered. Students were given the choice of returning the questionnaire either directly or with an assignment. With the recent increase in postal rates this procedure appeared to alleviate the cost constraint imposed upon the student.

Two follow-ups were carried out. The first involved only those students who were on Campus for the August vacation courses (Appendix C-3). The second, involving the remainder of the sample who had not replied but were still committed to extramural study, took place early in Term 3 (Appendix C-4). Where students had withdrawn during the intervening time period it was assumed that they would be unlikely to respond so they were omitted from the follow-up. The mailing procedure followed exactly the same pattern as

that of the first posting.

The questionnaire was not pre-tested although its design was discussed at some length with a number of past extramural students. In this way ambiguities could be eliminated and various questions reformulated to elicit the most pertinent response. A coding sequence which could be used in the computer analysis was devised and in most instances students had only to tick the appropriate box.

Analysis

Of the 2000 questionnaires sent out a total of 1253 (62.65 percent) were returned. Of these 1221 (61 percent) were used for analysis. Of the remainder 27 were late and 5 were invalid replies. Of those who did not respond it was possible to account for 49 (47 had withdrawn and 2 had gone overseas).

The sample was again tested for randomness. Z-scores were used for significance testing of sample statistics against known Extramural parameters. The significance level was set at $\alpha = .01$ ($z \leq 2.58$). This significance level was chosen to reduce the likelihood of Type I errors. The extramural population is not a static one. Students may withdraw at any time during the year and because of this the population has to be constantly redefined as all figures based on the University's statistics relate to enrolments as at 31 March. The figures also relate to both the New Zealand enrolments and those of students domiciled overseas. In some cases New Zealand and overseas enrolments are combined whilst in others each forms a separate category. Where separate categories had been defined it was possible to test

that they did not significantly change any calculation and thus, it was assumed that this would probably remain so for all cases.

The sample population was found to show some degree of fluctuation from the total extramural population. With regard to area there was no significant difference between rural and urban enrolment and neither were there any significant differences between areas within the North and South Islands. A significant difference was noted, however, between the North and South Islands. Here the South Island was over-represented - a situation which arose from the accumulated negative values of the North Island areas and the positive values of the South Island areas.

Other variables able to be tested were age, sex, marital status, enrolment numbers of nurses and teachers, and degree and diploma enrolments. Significant differences were noted for age and marriage. The 20-24 age group was under-represented ($z = -4.5$) while the 40-plus age group was over-represented ($z = 4.5$). Married couples were also over-represented ($z = 3.6$). Thus, in the interpretation of the questionnaire all these differences had to be accounted for, especially where they were likely to have a specific bearing on the responses given or the conclusions to hypotheses drawn.

The Area Convenors' Questionnaire

One of the notable disadvantages of extramural study is the lack of opportunity for discussion and exchange of ideas with lecturers and with other students. Where several students are living in the same area they are encouraged to form study groups and to meet at regular intervals. Some-

times it is possible for lecturers to visit these groups during the year.

A recent development has been the establishment of Area Co-ordinating Panels with the area convenor acting as a voluntary liaison representative. In order to obtain information regarding interaction of students within areas an open-ended questionnaire was sent to each of the area convenors (Appendix D). The purpose of this was not to gather data for statistical analysis, but rather to use the information as a general expression of student involvement at the local level.

Nineteen of the 20 convenors replied and some had much more to report than others; a reflection, in itself, of student interaction. Although there was some variation in the responses the majority of opinions expressed were very similar and it was these that were used to endorse some of the findings in Chapters 4 and 5, and to add to the discussion in the conclusion.

FOOTNOTES

- 1 Havelock North's population in 1976 was 8348.
- 2 A person holding both a University degree and a Teachers' College Certificate is, for example, included only amongst the degree holders.

CHAPTER 3

SPATIAL AND NON-SPATIAL RELATIONSHIPS
IN THE DECISION MAKING PROCESS

In the introduction it was suggested that 'the most obvious reason why a person enrolls for a correspondence course is the absence of an institution capable of providing face-to-face tuition in the subject he wishes to study' (p. 14). To fully appreciate this statement factors of accessibility must be considered. Universities may not be accessible to particular students for three reasons:

- 1) Geographical.
- 2) Temporal.
- 3) Physical.

In the first case many would-be students live in areas which are not conveniently located to a university. Where university courses require regular attendance these subjects become inaccessible to these students. In the second case there are many students who wish to undertake university courses by part-time attendance. Universities are not accessible to these students if they do not permit courses to be taken part-time or if their time-tables are such as to make it difficult for employed students to attend classes. In the last case accessibility may be inhibited by physical factors. Even if a student is located conveniently to a university and the university provides opportunity for part-time study, he or she may be unable to attend for a variety of reasons, e.g. because of a physical handicap or from some

domestic reason as is the case of housewives with young children. For these students the possibility of extramural study facilitates access to a university education.

Glatter and Wedell (1971) noted that 'very little has been done to discover the characteristics of part-time students who register for external degrees, the objectives they seek and their performance' (p. 21). In New Zealand the standard characteristics of extramural students (e.g. age, sex, occupation, entrance qualifications, qualification sought) have been well documented (Bewley, 1970, 1979; Chesson and MacDonald, 1979; MacDonald, 1977). However, the relationships which exist between them and students' reasons for studying have not been considered in any detail.

The motivation or incentive behind a person's desire to study extramurally may be one of a number of factors. Orchardson and Leedham (1977,126) in their study of life-time education isolate the following:

- 1) A desire to improve professional prospects, job mobility or, in the case of women, a desire to take up a job as family commitments decrease.
- 2) The need to retrain in the light of technological change.
- 3) The need to retrain in cases of redundancy.
- 4) A desire to study as a leisure time activity.
- 5) The desire for a second chance - people who missed an earlier opportunity or who had dropped out.

THE RELATIONSHIP BETWEEN STUDENT CHARACTERISTICS AND THE REASON FOR STUDY

It is assumed that there will be differences between student standard characteristics and that they will be important determinants in the decision-making process of

whether or not to commence or recommence university studies. The research hypothesis that there is a relationship between student standard characteristics and the reason for study was tested through a series of subhypotheses. These suggest that there is a relationship between a student's:

- 1) Age and reason for study.
- 2) Age and qualification sought.
- 3) Sex and reason for study.
- 4) Sex and qualification sought.
- 5) Occupation and reason for study.
- 6) Reason for study and qualification sought.
- 7) Qualification held and reason for study.
- 8) Qualification held and qualification sought.

Data from the 1979 sample population was analysed by means of the Chi-square test. In each case the null hypothesis that there is no relationship was rejected. Since the chi-square test statistic does not indicate the direction of differences the tables are included in full. Expected frequencies are printed below observed frequencies.

The first test showed that of those students studying for personal interest the most over-represented group is the 50-plus age group while the most significantly under-represented group is the 35-39 age group. This group is studying for work related reasons. For reasons related to present work the 40-44 and 45-49 age groups are the most significantly over-represented, while it is quite obvious that future work will not be the main concern of those over 40 years old (Table 3-1).

TABLE 3-1: Age and Reason for Study

Age	Personal Interest	Present Work Related	Future Work Related	Totals
< 20	16 (16.3)	20 (22.6)	20 (7.1)	46
20 - 24	75 (63.7)	77 (88.4)	28 (28)	180
25 - 29	86 (88.1)	117 (122.3)	46 (38.6)	249
30 - 34	82 (87.7)	123 (121.8)	43 (38.5)	248
35 - 39	53 (65.8)	100 (91.4)	33 (28.8)	186
40 - 44	34 (39.2)	63 (54.5)	14 (17.2)	111
45 - 49	30 (28.3)	46 (39.3)	4 (12.4)	80
50+	46 (32.9)	40 (45.7)	7 (14.4)	93
Totals	422	586	185	1193

χ^2 df 14, .05 = 23.685, χ^2 calc = 29.887, H_0 rejected

Age and reason for study quite naturally suggests that there will be some link with the qualification sought and the test proves this to be so (Table 3-2). The most significantly over-represented groups for taking diploma courses are the 40-44 and 45-49 age groups. For those taking degrees the 20-24 and 50-plus age groups are significantly over-represented. This is, however, quite logical for the majority of 20-24 year olds will not have had the work experience needed to be admitted to a diploma course and the older students will no longer benefit economically

by taking a diploma course.

TABLE 3-2: Age and Qualification Sought

Age	Degree	Diploma	Totals
20 - 24	154 (135.3)	19 (37.7)	173
25 - 29	188 (187.7)	52 (52.3)	240
30 - 34	185 (190.8)	59 (53.2)	244
35 - 39	145 (147)	43 (40.9)	188
40 - 44	78 (87.6)	34 (24.4)	112
45 - 49	54 (61)	24 (17)	78
50+	75 (69.6)	14 (19.4)	89
Totals	879	245	1124

χ^2 df 6, .05 = 12.592, χ^2 calc = 23.563, H_0 rejected

Note: <20 yrs omitted as this age group does not generally hold a degree needed for entry into the Diploma programmes.

The third test showed that males are significantly over-represented for present work related reasons and under-represented for future work related reasons while with females the opposite occurs (Table 3-3). The obvious cause is that many females are not currently in full-time employment because of domestic duties, but are looking towards a return to employment in later life. Therefore, in the fourth

test, males were significantly over-represented in diploma enrolments while females were under-represented (Table 3-4).

TABLE 3-3: Sex and Reason for Study

	Personal Interest	Present Work Related	Future Work Related	Totals
Male	150 (165.9)	284 (231.3)	36 (72.8)	470
Female	274 (258.1)	307 (359.7)	150 (113.2)	731
Totals	424	591	186	1201

χ^2 df 2, .05 = 5.99, χ^2 calc = 52.78, H_0 rejected

TABLE 3-4: Sex and Enrolment

	Degree	Diploma	Totals
Male	342 (356.6)	109 (94.4)	451
Female	587 (572.4)	137 (151.6)	724
Totals	929	246	1175

χ^2 df 1, .05 = 3.84, χ^2 calc = 4.624 H_0 rejected

The test that a person's occupation and reason for study are related shows that housewives and non-professional workers are significantly over-represented in the group studying for personal interest (Tables 3-5a to 3-5c). Those in professional positions generally have some incentive to study, usually in terms of promotion and salary increments, therefore work related reasons are important for them. The

sixth test quite clearly indicated that diplomas are over-represented among students studying for work related reasons while degrees have a strong personal interest appeal (Table 3-6).

TABLE 3-5a: Occupation and Reason for Study

	Personal Interest	Work Related	Totals
Full-time	294 (320.1)	621 (594.9)	915
Part-time	26 (24.5)	44 (45.5)	70
Housewife	96 (71.4)	108* (132.6)	204
Totals	416	773	1189

χ^2 df 2, .05 = 5.99, χ^2 calc = 16.452, H_0 rejected
* refers to future work

TABLE 3-5b: Occupation and Reason for Study

	Personal Interest	Work Related	Totals
Professional/ Managerial	236 (256)	560 (540.5)	796
Others	75 (55)	98 (117.5)	173
Totals	311	658	969

χ^2 df 1, .05 = 3.84, χ^2 calc = 12.77, H_0 rejected

TABLE 3-5c: Occupational Interest and Reason for Study

	Personal Interest	Work Related	Totals
Education	179 (196.8)	378 (360.2)	557
Medical	78 (88.3)	172 (161.7)	250
Others	167 (138.9)	226 (254.1)	393
Totals	424	776	1200

χ^2 df 2, .05 = 5.99, χ^2 calc = 13.1, H_0 rejected

TABLE 3-6: Reason for Study and Qualification Sought

	Personal Interest	Work Related	Totals
Degree	352 (311.7)	564 (604.3)	916
Diploma	41 (81.3)	198 (157.7)	239
Totals	393	762	1155

χ^2 df 1, .05 = 3.84, χ^2 calc = 38.15, H_0 rejected

The last two tests took into account the qualification already held and showed quite conclusively that those with Provisional Admission and Ad Eundem Statum are over-represented in the work-related group and in the diploma group (Tables 3-7 and 3-8). At the other end of the scale those holding post-graduate qualifications are similarly engaged. In the middle is the group holding University Entrance and

the group holding a Bachelor's degree. Although the reason for study does not appear to be so clearly defined as for the two previous groups the qualification sought is an obvious outcome of administration regulations; thus degrees are sought by those with U.E. and diplomas are sought by the graduates.

TABLE 3-7: Qualification Held and Reason for Study

	Personal Interest	Work Related	Totals
Provisional Admission	82 (104.1)	213 (190.9)	295
U.E./Sch.	241 (229.5)	409 (420.5)	650
Bachelor's	70 (67.8)	122 (124.2)	192
Post Grad.	31 (22.6)	33 (41.4)	64
Totals	424	777	1201

χ^2 df 3, .05 = 7.82, χ^2 calc = 13.04, H_0 rejected

TABLE 3-8: Qualification Held and Qualification Sought

	Degree	Diploma	Totals
Provisional Admission	222 (234)	74 (62)	296
U.E./ Sch.	594 (518.7)	62 (137.3)	656
Bachelor's	85 (133.6)	84 (35.4)	169
Post Grad.	28 (42.7)	26 (11.3)	54
Totals	929	246	1175

TABLE 3-8: Cont.

$$\chi^2 \text{ df } 3, .05 = 7.85, \chi^2 \text{ calc} = 163.749, H_0 \text{ rejected}$$

THE RELATIONSHIP BETWEEN STUDENT CHARACTERISTICS
AND LOCATION

Relationships between student standard characteristics and location will also be reflected in the decision-making process and since the basis of this thesis is to look at the geographical distribution of students and to account for patterns of diffusion the following hypotheses were also tested. There is a relationship between a student's:

- 1) Sex and location.
- 2) Occupation and location.
- 3) Reason for study and location.
- 4) Location and qualification sought.

The first test considered male and female enrolments at the urban and county level. Contrary to assumptions there were proportionately more male students than expected in the counties and the H_0 that there is no relationship between sex and location was rejected (χ^2 df 1, .05 = 3.84, χ^2 calc = 3.85) (Table 3-9a).

TABLE 3-9a: Sex and Location

	Male	Female	Totals
Counties	157 (141.7)	208 (223.3)	365
Urban Areas	317 (332.3)	539 (523.6)	856
Totals	474	747	1221

When the counties were disaggregated to look specifically at North Island and South Island patterns it was revealed that the main differences occurred in the North Island. Here males were significantly over-represented in the counties while females were under-represented (Tables 3-9b and 3-9c).

TABLE 3-9b: Sex and Location - North Island

	Male	Female	Totals
Counties	113 (96.8)	134 (150.2)	247
Urban Areas	248 (264.2)	426 (409.8)	674
Totals	361	560	921
χ^2 df 1, .05 = 3.84, χ^2 calc = 5.9 H_0 rejected			

TABLE 3-9c: Sex and Location - South Island

	Male	Female	Totals
Counties	44 (44.4)	74 (73.5)	118
Urban Areas	69 (68.5)	113 (113.4)	182
Totals	113	187	300
χ^2 df 1, .05 = 3.84, χ^2 calc = .012 H_0 accepted			

The second hypothesis suggests a relationship between occupation and location. The first test included all workers except part-timers as they were considered not to be a mutually exclusive group. Significant differences were found at the counties level where clerical workers were

under-represented and housewives were over-represented (Table 3-10a). The under-representation of clerical workers, however, may simply be a reflection of the national economy. The H_0 was rejected with χ^2 df 3, .05 = 7.82, χ^2 calc = 13.44.

TABLE 3-10a: Location and Occupation

	Professional/ Managerial	Clerical	Others	House- wives	Totals
Counties	204 (215.8)	12 (20.9)	33 (28.7)	76 (59.6)	325
Urban Areas	549 (537.2)	61 (52.1)	67 (71.3)	132 (148.4)	809
Totals	753	73	100	208	1134*

* part-timers omitted

The careers that people have trained for also tend to affect decision-making. Many housewives and part-time workers are trained nurses and teachers. The test on occupational interest showed that education was over-represented in the counties while nursing was under-represented. Those engaged in other career structures were also significantly under-represented in the counties (Table 3-10b). The H_0 that there is no relationship between occupational interest and location was also rejected (χ^2 df 2, .05 = 5.99, χ^2 calc = 27.57).

TABLE 3-10b: Location and Occupational Interest

	Education	Medical	Others	Totals
Counties	211 (169.8)	55 (76.4)	98 (117.9)	364
Urban Areas	358 (399.2)	201 (179.6)	297 (277.1)	856
Totals	569	256	395	1220

For the third hypothesis questionnaire responses were reclassified to allow for only two types of response - personal interest and work relatedness (Table 3-11). The H_0 that there is no relationship between location and reason for study was rejected (χ^2 df 1, .05 = 3.84, χ^2 calc = 5.997).

TABLE 3-11: Location and Reason for Study

	Personal Interest	Work Related	Totals
Counties	145 (126.46)	212 (230.54)	357
Urban Areas	279 (297.54)	561 (542.46)	840
Totals	424	773	1197

The fourth hypothesis that there is a relationship between location and qualification sought was based on the assumption that a greater proportion of students enrolled for diplomas would reside in the urban areas. The test revealed no significant difference and the H_0 was accepted (χ^2 df 1, .05 = 3.84, χ^2 calc = 1.663) (Table 3-12).

TABLE 3-12: Location and Qualification Sought

	Degree	Diploma	Totals
Counties	289 (280.74)	66 (74.26)	355
Urban Areas	641 (649.26)	180 (171.74)	821
Totals	930	246	1176

Unfortunately the data did not allow for any further disaggregation of the diploma enrolments to see if there was any significant difference in location between those enrolled for Business Studies diplomas and those enrolled for Education diplomas.

Having established that there are relationships between student standard characteristics, their reasons for study, the qualifications they seek and their geographical locations, the way in which information concerning the extramural programme is disseminated now needs to be established. Interaction is basic to diffusion and how information is passed on in the adoption process is also important.

THE DIFFUSION OF INFORMATION

The existence of groups is extremely important in the flow of information because, in general, information flow within groups is greater than information flow between groups. Thus, the social distance separating individuals belonging to different groups may be very much greater than the physical difference separating them. Information flows most readily when both the possessor of an item of infor-

mation and the seeker of such information belong to the same group. Hägerstrand (1953) emphasises this idea when he discusses socio-economic status, for it is well understood that the links in the networks of private communications differ in spatial range between socio-economic groups.

The behavioural approach to decision making is also pertinent here. A person's objective environment can be defined as his operational space while his behavioural environment is his action space. Only a limited proportion of the information transmitted in operational space is effectively received and it is this which determines the nature of action space. Therefore, unless the idea of extramural study exists within a person's action space and unless its potential is fully appreciated it will have no place, for anything which is outside his action space or behavioural environment is irrelevant to, and has no influence on, his conscious decision making.

Students were asked to indicate how they had first heard about Massey University's Extramural Studies programme. This should not presuppose that they immediately made the decision to adopt, for the adoption process constitutes awareness, interest, evaluation, trial and adoption. It does show, however, the sources of information most pertinent to the decision to study extramurally, the personal and impersonal. Personal sources, where information is passed directly from one person to another, or others may be formal or informal. Impersonal information is presented through the media, whether it be the written or spoken word. It generally has a wider coverage than information presented

by personal sources but it may only be heeded by a more specific group of individuals.

The research hypotheses are that there is a relationship between:

- 1) The location of potential students and the dissemination of the programme.
- 2) The occupational status of students and their sources of information.

It is generally hypothesised that the most usual way of gaining information about an innovation is through personal communication (Hägerstrand, 1967), and this is quite obviously the case with extramural students for 85 percent of the sample population indicated that they had first gained information through word of mouth. However, by looking to see if there are significant statistical differences between the impersonal and personal sources a more precise evaluation of the dissemination process can be made. Thus the first hypothesis is concerned with the dissemination of information in physical space while the second hypothesis is concerned with dissemination in social space.

By combining cells to give the two major types of dissemination: (1) through word of mouth, and (2) through the printed word, the H_0 that there is no relationship between location of potential students and the dissemination of the programme was rejected (χ^2 df 1, .05 = 3.84, χ^2 calc = 4.3). The test indicated that more students than expected who live in the counties first gained information through the printed word, whereas in urban areas less than expected gained their information this way (Table 3-13).

TABLE 3-13: Location and Source of Information

	Word of Mouth	Printed Word	Totals
Counties	295 (307)	66 (54)	361
Urban Areas	726 (714)	114 (126)	840
Totals	1021	180	1201

The second hypothesis suggests that there is a relationship between occupational status and the source of information. Present occupation was tested at two levels:

1) Those in employment and housewives.

2) Those employed in professional/managerial positions and others in employment.

In the first case the proportion of housewives gaining information through informal sources was proportionately greater than through impersonal sources. Both the printed word and formal advice cells showed less than expected frequencies. For those in employment, however, more than expected gained their information through the printed word and through formal advice (Table 3-14a). With χ^2 df 2, .05 = 5.99, χ^2 calc = 14.01 the H_0 that there is no difference in the way those in employment and housewives gain their information was rejected.

The second case also showed that a person's occupation has a bearing on the source of their information (Table 3-14b). Although there was little difference for informal discussion, proportionately more people engaged in non-

TABLE 3-14a: Occupation and Source of Information

	Printed Word	Formal Advice	Word of Mouth	Totals
Employed	154 (141.8)	185 (176.6)	641 (661.6)	980
Housewives	17 (29.2)	28 (36.4)	157 (136.4)	202
Totals	171	213	798	1182

TABLE 3-14b: Employed and Source of Information

	Profes- sional Journal	Newspaper Advert.	Formal Advice	Word of Mouth	Totals
Professional/ Managerial	87 (76.4)	42 (48.7)	145 (150.3)	522 (520.6)	796
Others	7 (17.6)	18 (11.3)	40 (34.7)	119 (120.4)	184
Totals	94	60	185	641	980

professional occupations gained initial information through formal advice or through magazine advertisements. Thus the H_0 that there is no difference in the way those employed in professional/managerial positions and the remainder of those employed gain information was also rejected (χ^2 df 3, .05=7.82, χ^2 calc = 13.764).

It, therefore, seems reasonable to suggest that because of the nature of the innovation personal sources are very important in the diffusion process. In considering social

space, it can also be seen that the spread of information through employment personnel and counsellors is more important in non-professional occupations than the professional ones where interaction between colleagues and the availability of professional journals is more pronounced.

The availability of information, however, is only one of the conditions which need to be satisfied if one is to adopt an innovation. The existence of a favourable attitude towards the innovation is, in this case, even more important. Given that a person possesses the economic means by which to acquire the innovation and perceives no problems as to its physical availability the choice to adopt or not to adopt is still firmly linked to the attitudes, constraints and opportunities offered by his individual circumstances.

The purpose of this chapter has been to indicate more precisely those spatial and non-spatial relationships which are operating within the diffusion process of the Extramural Studies programme. Why people choose to adopt the programme is clearly linked to non-spatial variables. The outcome of their decision, however, is reflected in physical space. The next two chapters will concentrate on examining the spatial patterns of total enrolment and subject enrolments and, by tracing the diffusion process through time, will seek to give a more detailed analyses of the extent of the relationships discussed here.

CHAPTER 4

THE SPATIAL DISTRIBUTION
OF TOTAL ENROLMENT

Studies by the Council for Cultural Co-Operation of the Council of Europe (1970) show that although it is sometimes held that the need for correspondence education is greatest in countries with large areas of sparsely populated territory, where the relative cost of providing face-to-face teaching facilities is high is not always the case. Information gained from the various member states signifies that the distribution of correspondence students does not vary significantly from the distribution of the total population, and if anything, correspondence study is relatively more popular in urban areas.

Glatter and Wedell (1971), in a survey of correspondence students in the British Isles found that nearly half lived in the South East region and 37 percent of them within the Greater London County and Outer Metropolitan areas. Nearly 50 percent of the students lived in conurbations having a population of 700 000 or more, about 10 percent in minor conurbations with a population between 250 000 to 700 000, and the remainder in other areas. For the authors this finding was quite unexpected. Of all the regions they defined the South East is undoubtedly the best served by further educational facilities and resources. Thomas (1974) points out that for the Open University a high proportion of the applications relative to population come from the

south eastern parts of England and a low proportion relative to population from all other areas. He suggests that this geographical pattern of applications seems to reflect the occupational pattern.

Does the British and European experience hold for New Zealand? In this chapter the discussion will focus on two major hypotheses:

1) That there is a positive relationship between population size and enrolment.

2) That there is a negative relationship between distance from Palmerston North and enrolment.

THE INFLUENCE OF POPULATION SIZE ON ENROLMENT

In order to test the hypothesis that there is a positive relationship between population size and enrolment regression analysis was carried out on the aggregate data set. The Wellington areas were aggregated so that Wellington could be directly compared with Auckland. Each of the five-yearly periods was tested in turn and a definite progression was observed. The relationship has steadily increased from $r = 0.507$ in 1960 to $r = 0.934$ in 1976. Although the standard deviation is large, Wellington does exhibit a large positive standard residual (9.85), while Auckland and Christchurch exhibit large negative standard residuals of (-5.47) and (-3.66) respectively. A systematic disaggregation of population size confirms that the relationship is still strong ($r = 0.850$). From the over-representation of Wellington and the under-representation of Auckland and Christchurch the hypothesis that Wellington's proximity to Palmerston North could be a reason for its high positive residual may

be justified. Results using the susceptible population only as a measure of correlation further confirmed this. The correlation was 0.938 and the residuals were Wellington (9.64), Palmerston North (2.06), Auckland (-5.55) and Christchurch (-3.78). The distance factor will, therefore, be examined in detail later in the chapter.

The measure of correlation was changed to show more specific relationships at urban and county levels. When both were included within the same measure no county had exhibited a standard residual of greater or less than ± 2.00 . Figure 4-1a shows the relationship when urban areas only were measured ($r = 0.925$). When the three metropolitan areas of Auckland, Wellington and Christchurch were omitted the correlation fell to 0.692 (Fig. 4-1b). As Birrell (1977) found Auckland, because of its extreme value, creates an apparently strong relationship but when it is omitted from the data set the relationship is weaker.

When the counties were measured separately a correlation coefficient of 0.790 was obtained (Fig. 4-1c). Those experiencing very high positive standard residuals were Rangitikei (5.46), Waimea (2.52) and Marlborough (2.03). The Rangitikei county has several moderately sized towns and a high proportion of enrolments were related to army personnel and to teachers. In the two South Island counties population increases, especially in the 20-40 year age-group, were noted. Postal code discrepancies may have contributed, however, towards the large negative standard residual for Paparua (-4.27).

As population size in the counties decreases so the

FIG. 4-1a

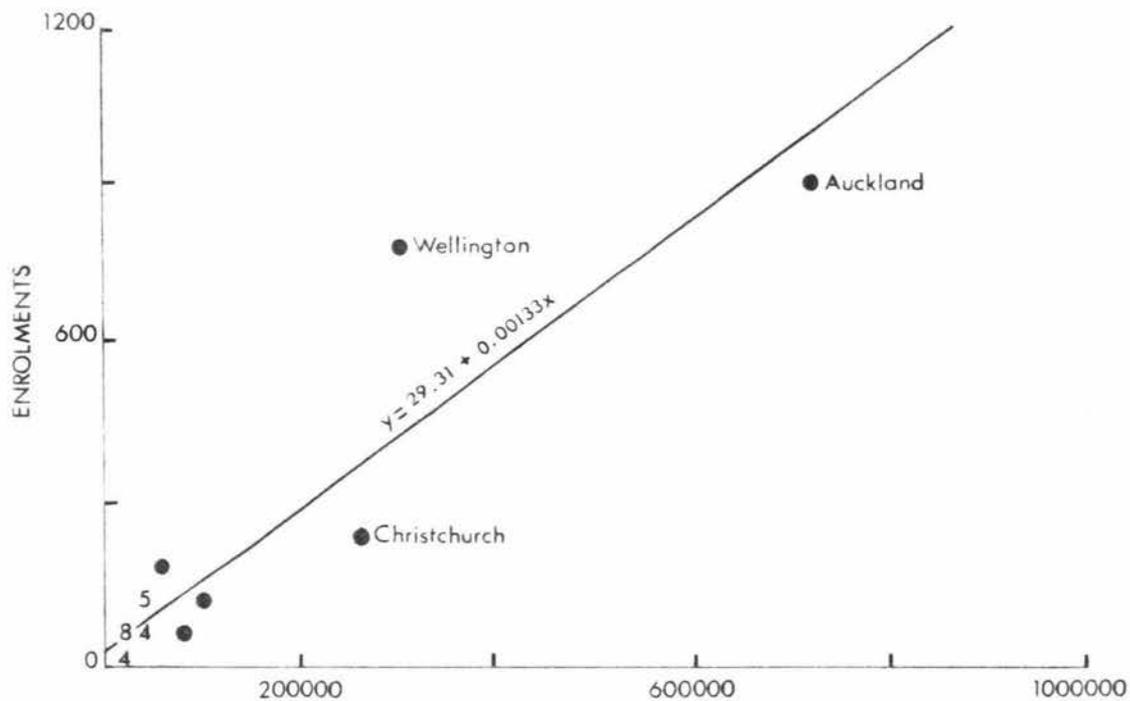
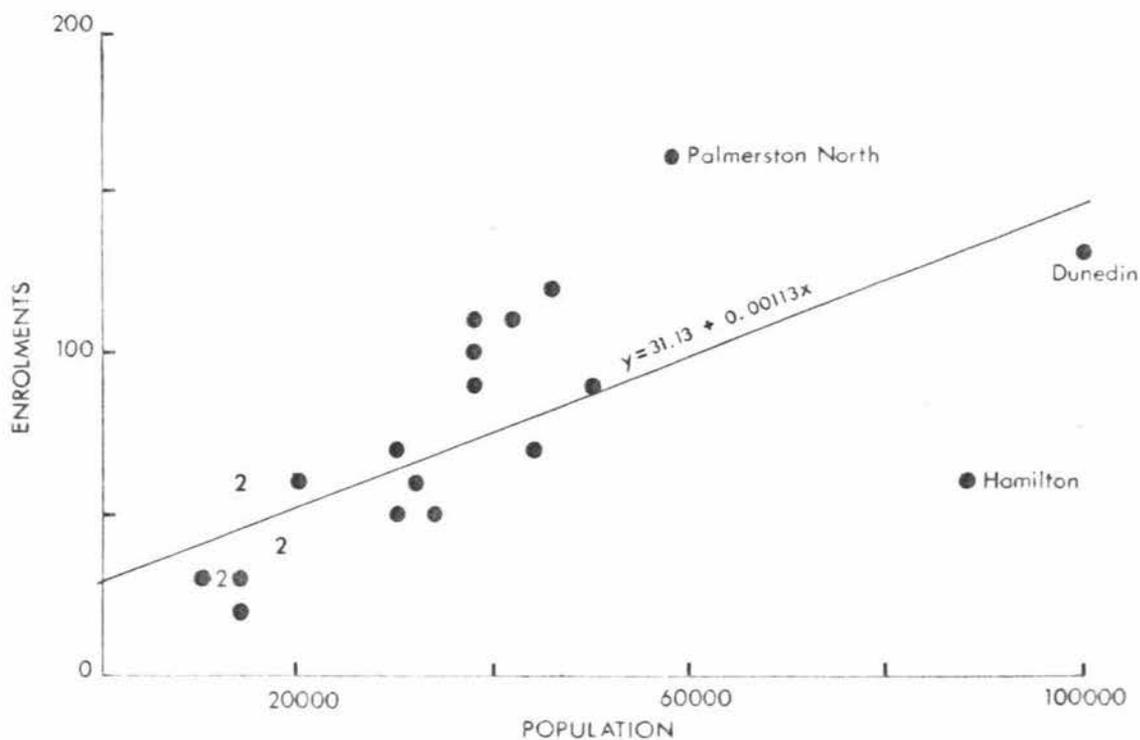


FIG. 4-1b



The Relationship between Extramural Enrolment and the Urban Population

FIG. 4-1c

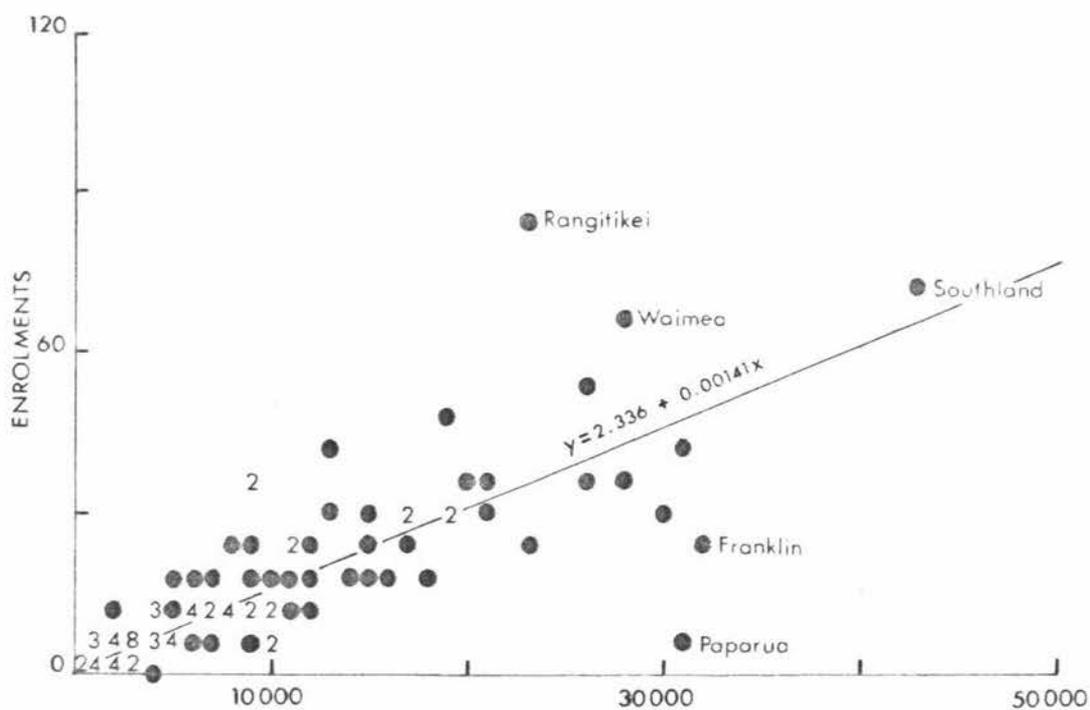
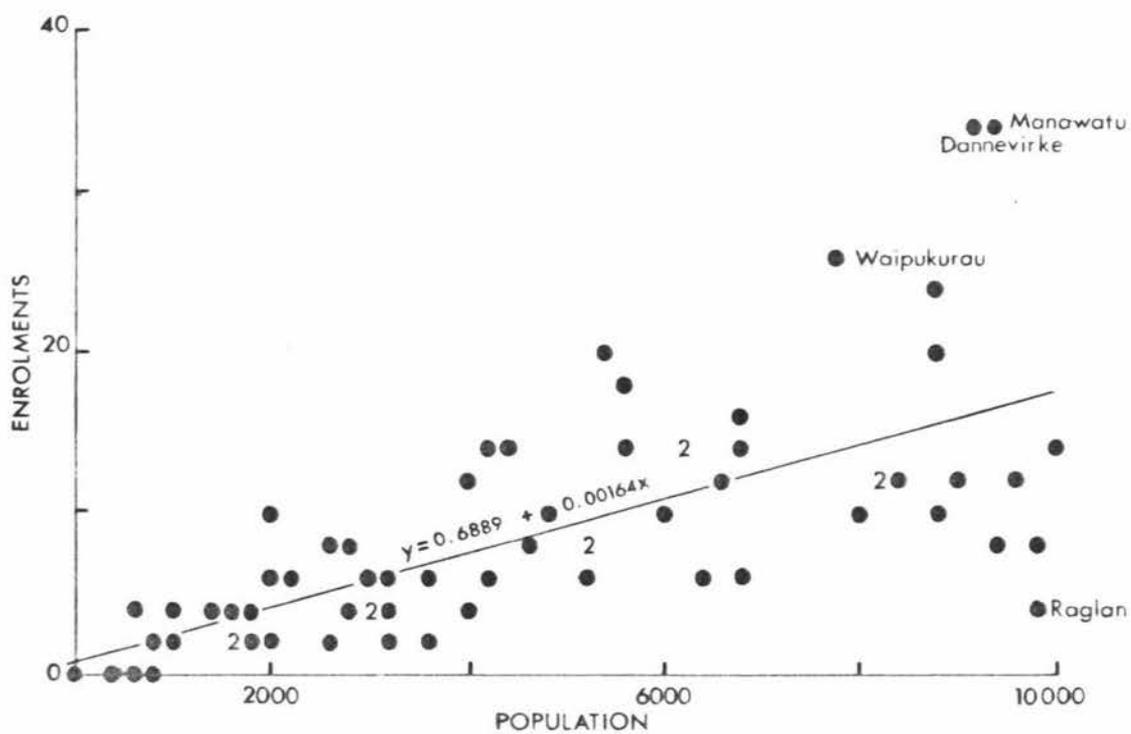


FIG. 4-1d



The Relationship between Extramural Enrolment and the County Population

correlation weakens. The correlation measure for counties with populations up to 10 000 ($r = 0.676$), showed that all the areas with high positive standard residuals are within easy reach of Massey University (Dannevirke (3.27), Manawatu (3.23) and Waipukurau (2.35)) (Fig. 4-1d). When the measure was for populations of up to 5000 the coefficient was 0.585. An examination of the scattergraphs thus shows a greater fluctuation in enrolments from areas with small populations - a reflection of national population movements. Although a high correlation is realised over the entire population it is not possible to predict in any detail future enrolments. One must simply conclude at this stage of the analysis that enrolment patterns will approximate the urban hierarchy.

During the last 20 years the national urban population has steadily increased with a corresponding decrease in the rural population. In 1960 there were slightly more enrolments from the students living in the counties (Fig. 4-2a). But, with two-thirds of the intake being teachers and over half of the country's schools being situated in rural and small provincial towns, this was to be expected. The pattern has since reversed and with greater opportunity being given to professional continuing education through enrolment in Diploma programmes the pattern should continue to remain urban-oriented (Fig. 4-2a). Since the majority of urban areas are in the North Island the relationship between population and enrolment growth as shown in Figure 4-2b is readily discerned.

Diffusion patterns for overall total enrolments are

FIG. 4-2a

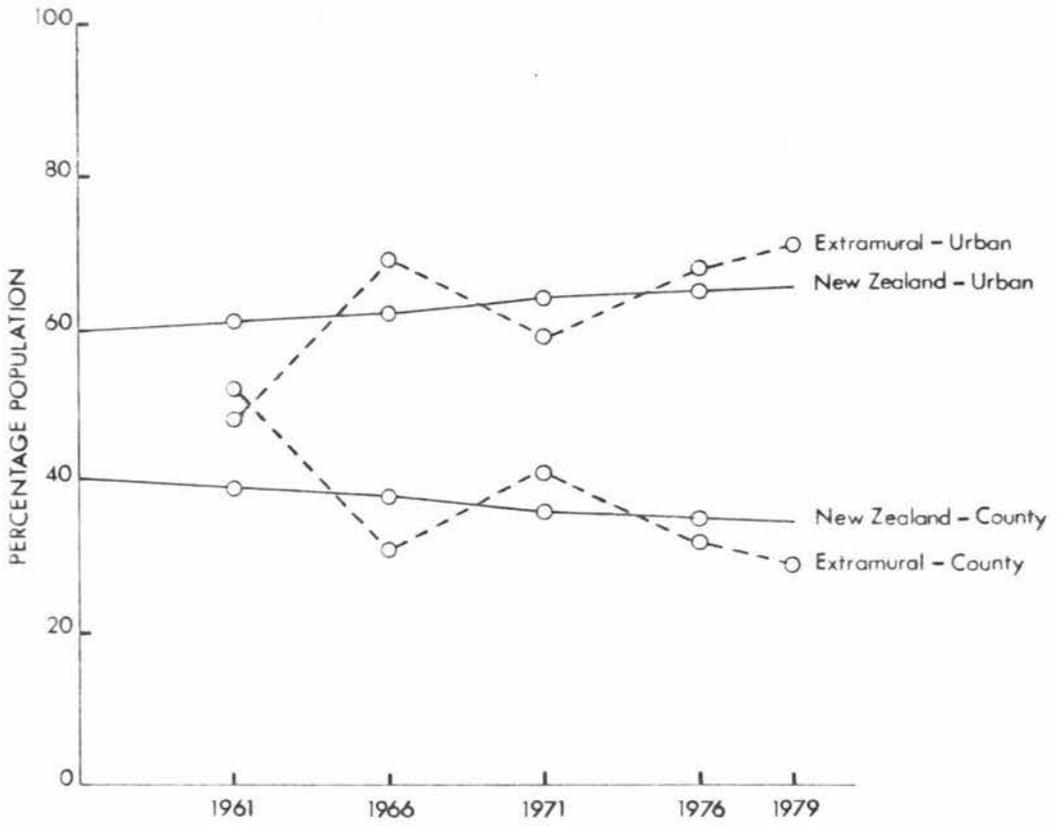
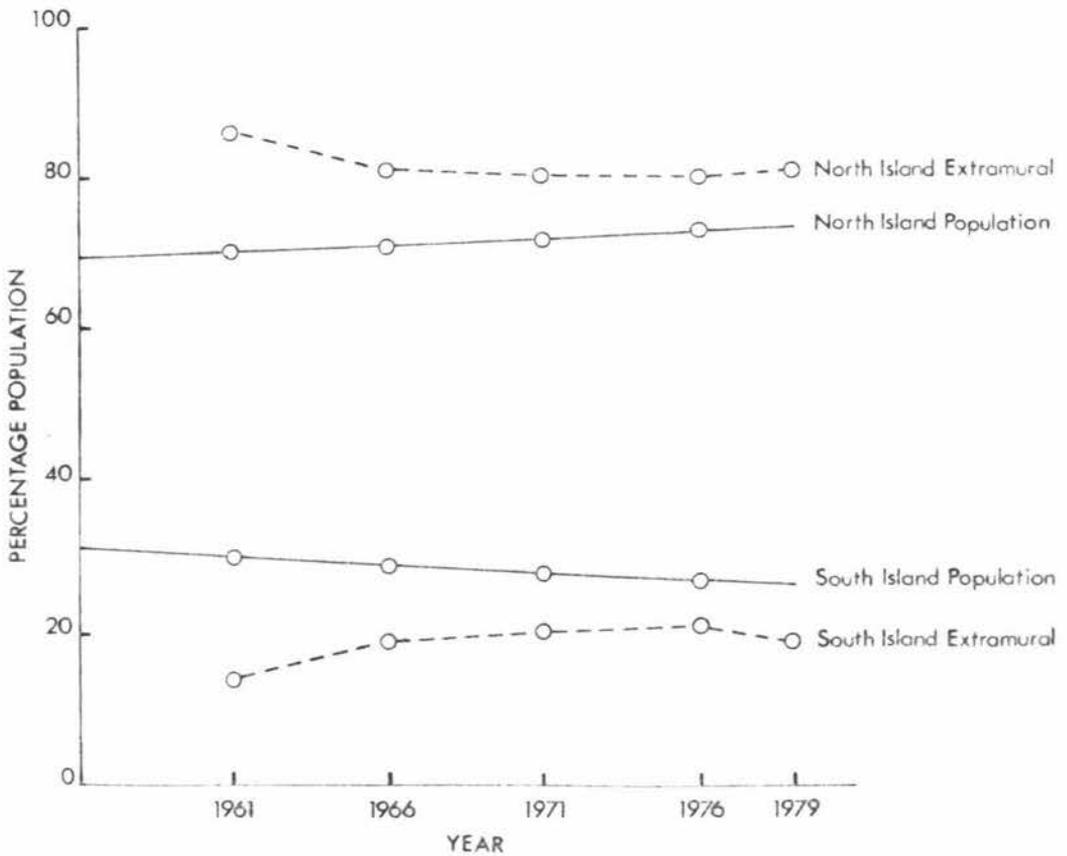


FIG. 4-2b



Comparative Extramural and National Populations

best examined through a series of maps (Figs. 4-3a to 4-3e). In 1960 only 0.06 percent of the total new Zealand population were involved in extramural study whereas 0.60 percent were studying internally at the universities. These 0.60 percent were, however, scattered throughout 75 percent of the geographical areas although 25 percent of the unrepresented areas were in the South Island (Fig. 4-3a). By 1976 the percentage of extramural students had risen to 0.16 (internal students totalled 1.30 percent), and all areas except Fiordland had at some time been represented (Fig. 4-3d). As was planned the majority of the first students resided in areas outside the metropolitan centres. Only 15 percent lived in the University centres. A perusal of the enrolment applications for the two areas with the most enrolments in 1960 (New Plymouth, 26; Wanganui, 35) showed, however, that 33 percent of these were from senior high school students whose parents wished them to use extramural study as a transition between school and full-time internal university study. It would appear that in a few exceptional circumstances school students have been allowed to enrol in a subject on the condition that it was for personal interest i.e. non-credit.

Figure 4-3b shows that by 1966 the majority of areas had been penetrated - either through expansion or relocation diffusion. By 1971 the only areas remaining unrepresented were all in the South Island (Fiordland, Waihemo and Stewart Island), (Fig. 4-3c). Enrolment numbers in Southland had increased considerably and, as with enrolments in the Rangitikei county in the North Island, the actual county

population size and the composition of its towns were a main contributing factor. For the North Island, in general, a more important factor has been the movement of people to the northern half of the North Island. The initial reason for this migration lay in the change in emphasis of farming activities in which the development of dairying played an important part. The expansion of dairying in itself called for the development of factory processing facilities and service industries. These farming trends have been reinforced by the growth of forest processing industries and compounded further by the general tendency for large-scale manufacturing units to be located close to the biggest local markets.

The majority of New Zealand's population are located in urban areas and it is here that the most rapid population growth rates are occurring. In 1976 eighty-two percent of the total population were living in urban areas (1976 Population Census). Sixty-seven percent lived in towns with populations of 10 000 or more. In the process of urbanisation some centres have grown more quickly than others (Franklin, 1978; Holmes, 1976). There is a tendency towards concentration of population in the largest centres and also a movement of population from the south to the north. Where the two tendencies reinforce each other, as they do in the case of the combined Auckland Urban Areas, the rate of growth has been very rapid (14.3 percent increase between 1971 and 1976). Whangarei (14.8 percent), Hamilton (17.3 percent), Tauranga (19.3 percent) and Rotorua (17.4 percent) have grown at similar rates. Over 44 percent of the total

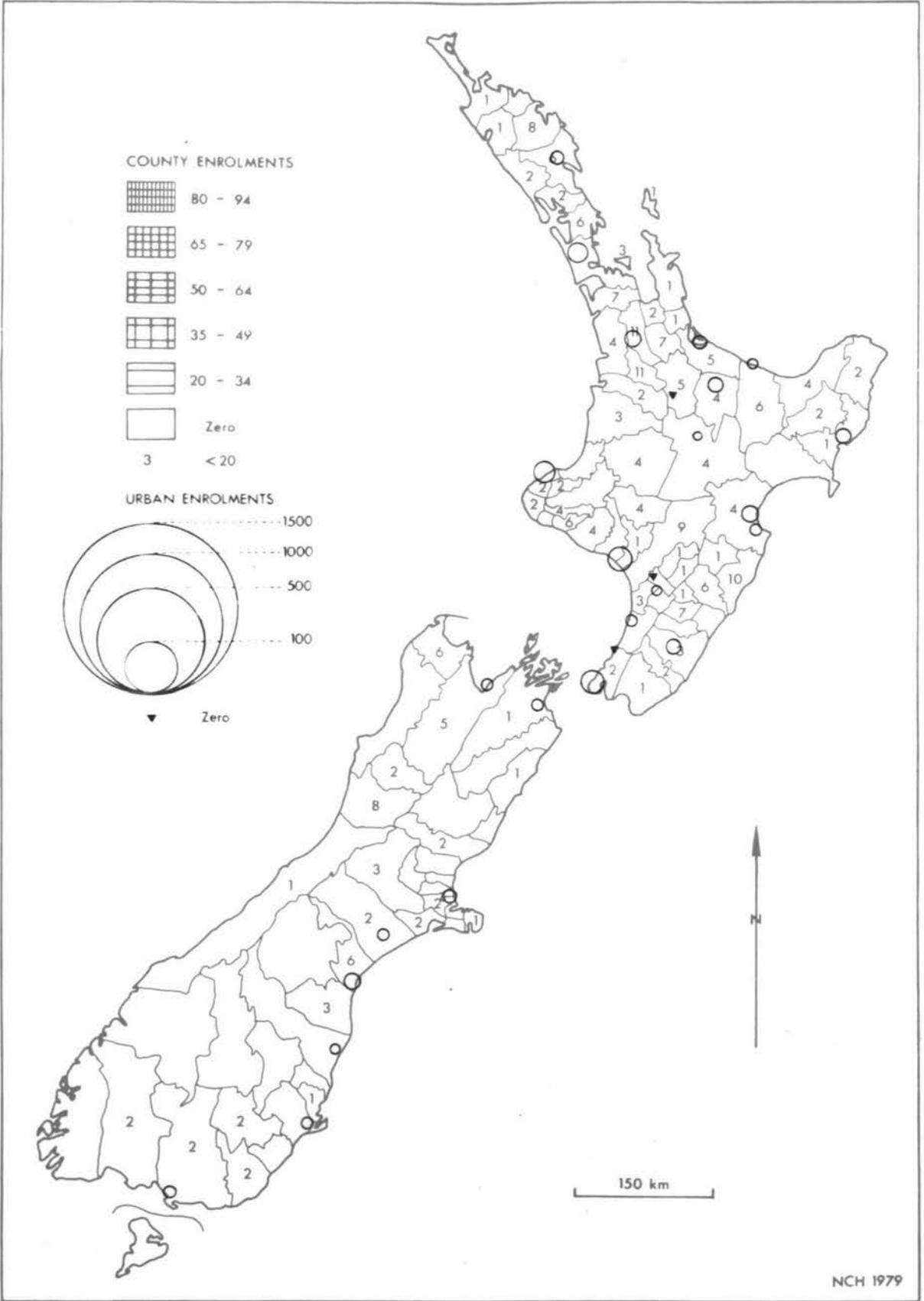


FIG. 4-3a Total Enrolment - 1960: County and Urban

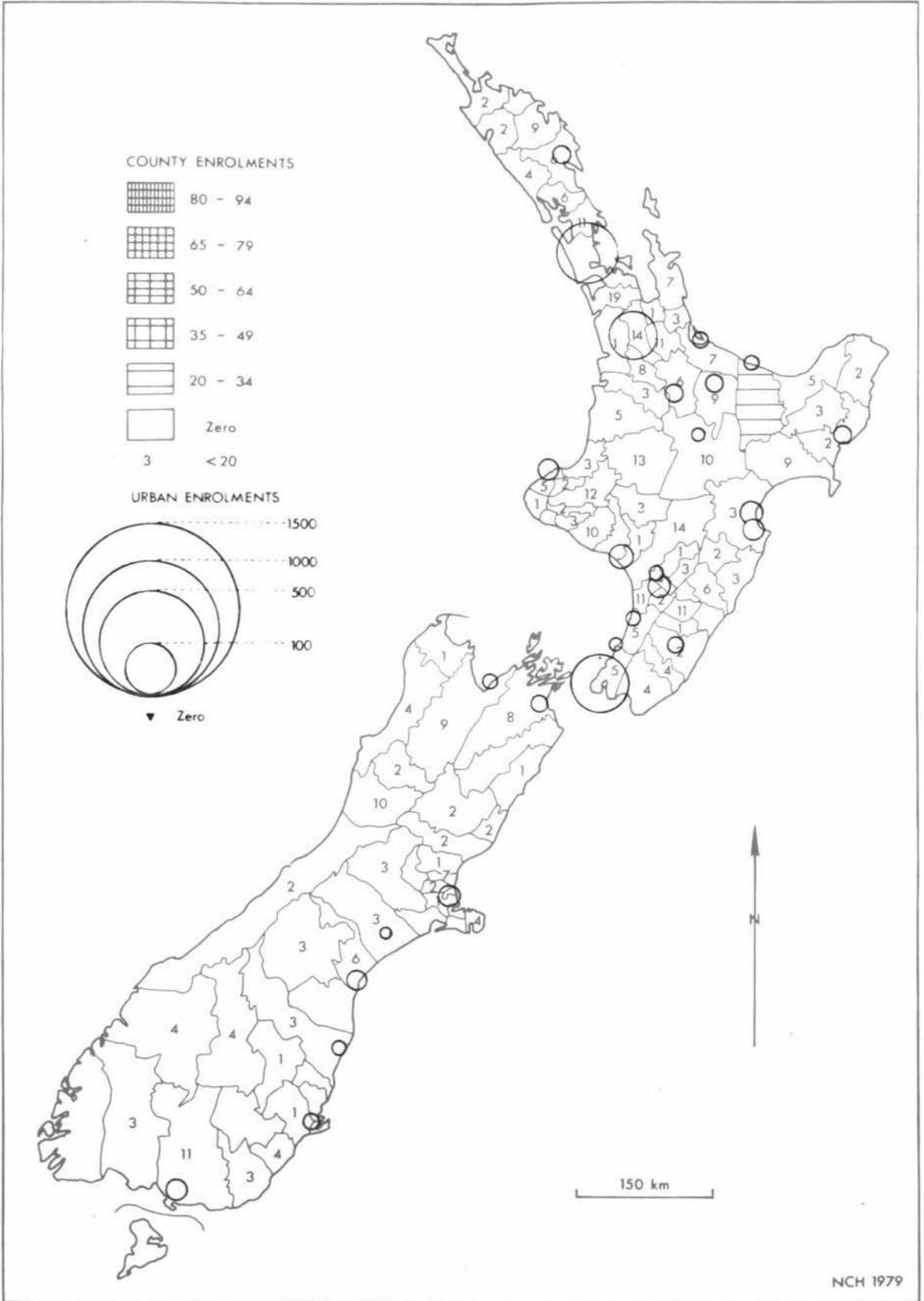


FIG. 4-3b Total Enrolment - 1966: County and Urban

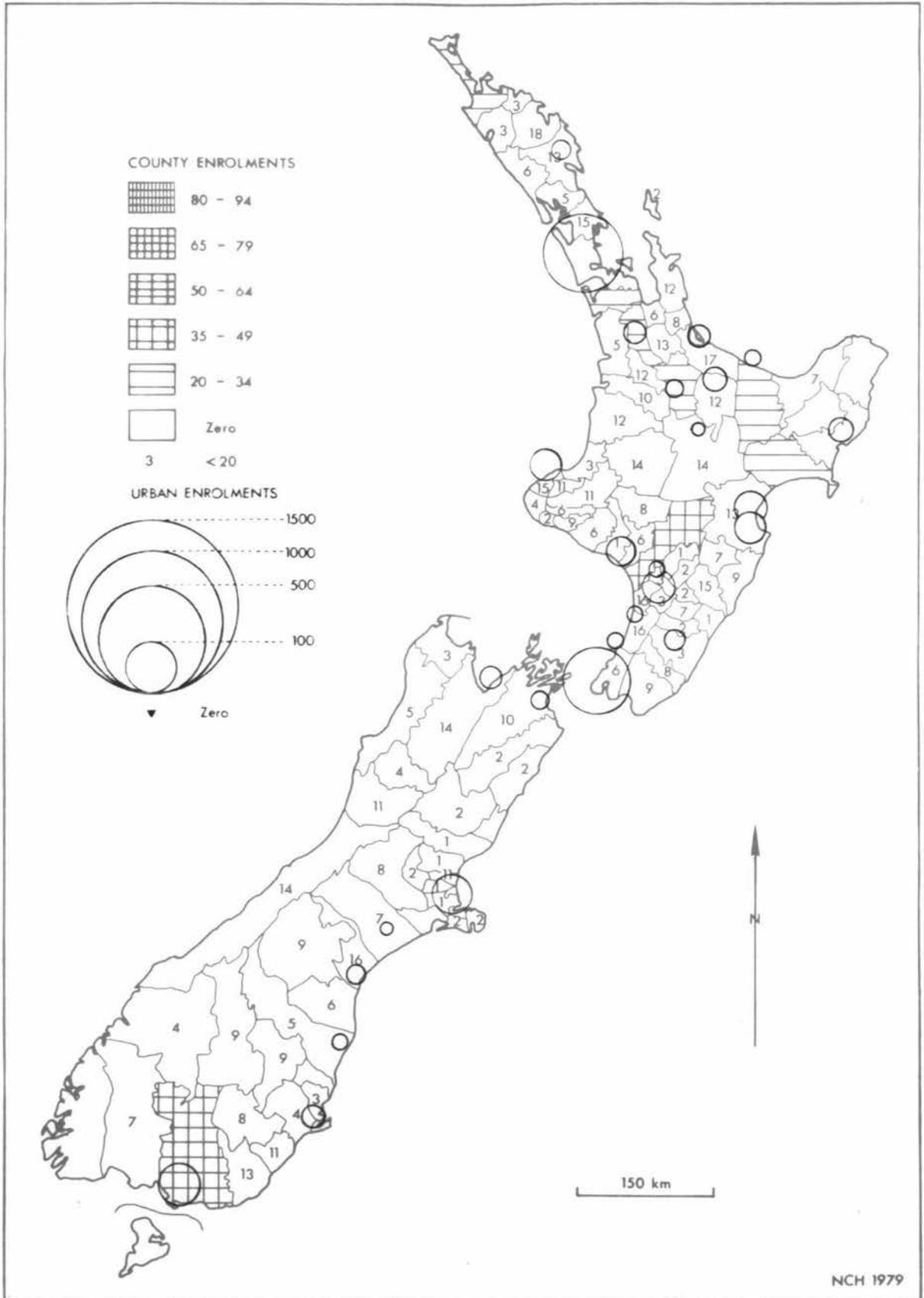


FIG. 4-3c Total Enrolment - 1971: County and Urban

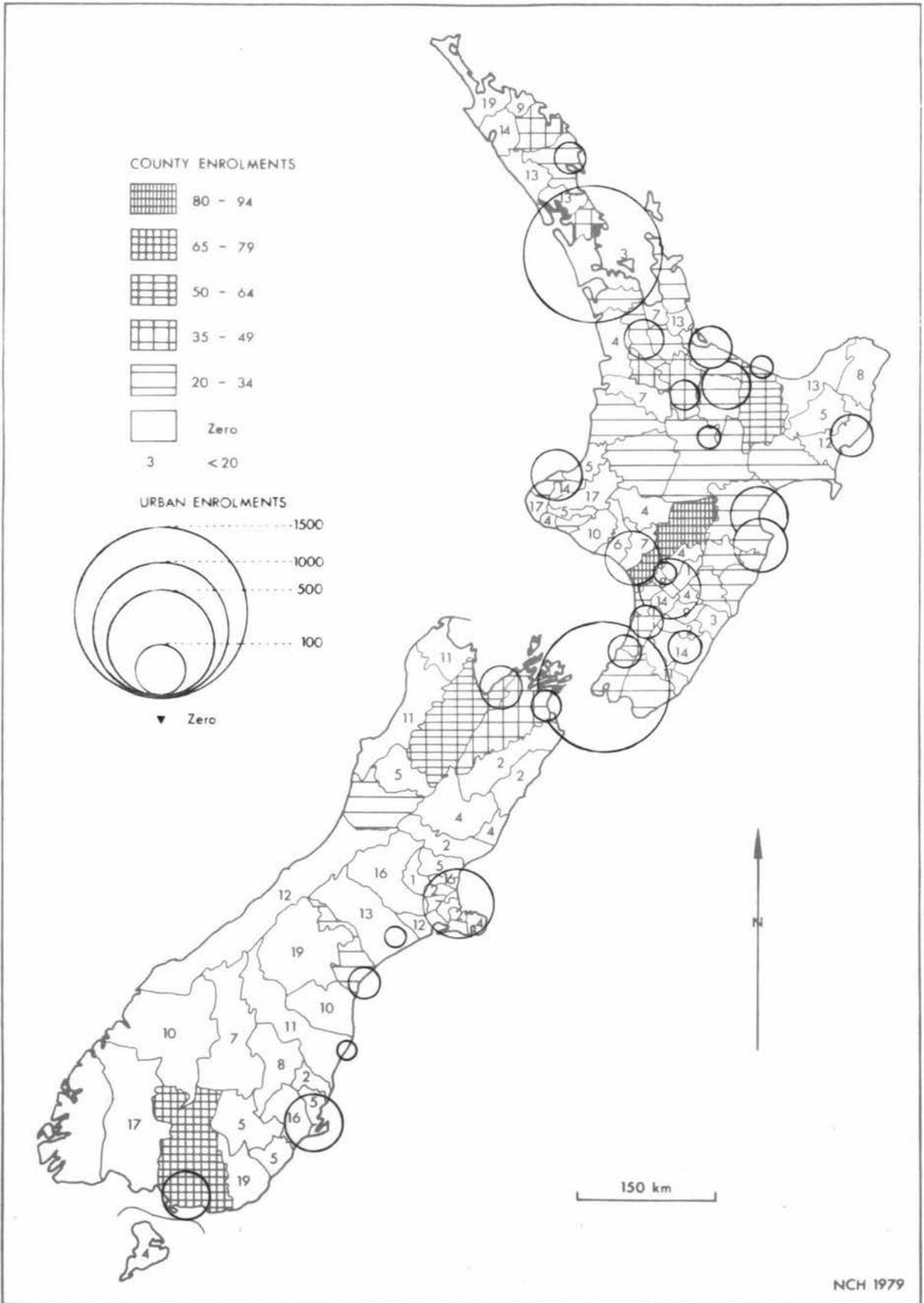


FIG. 4-3d Total Enrolment - 1976 : County and Urban

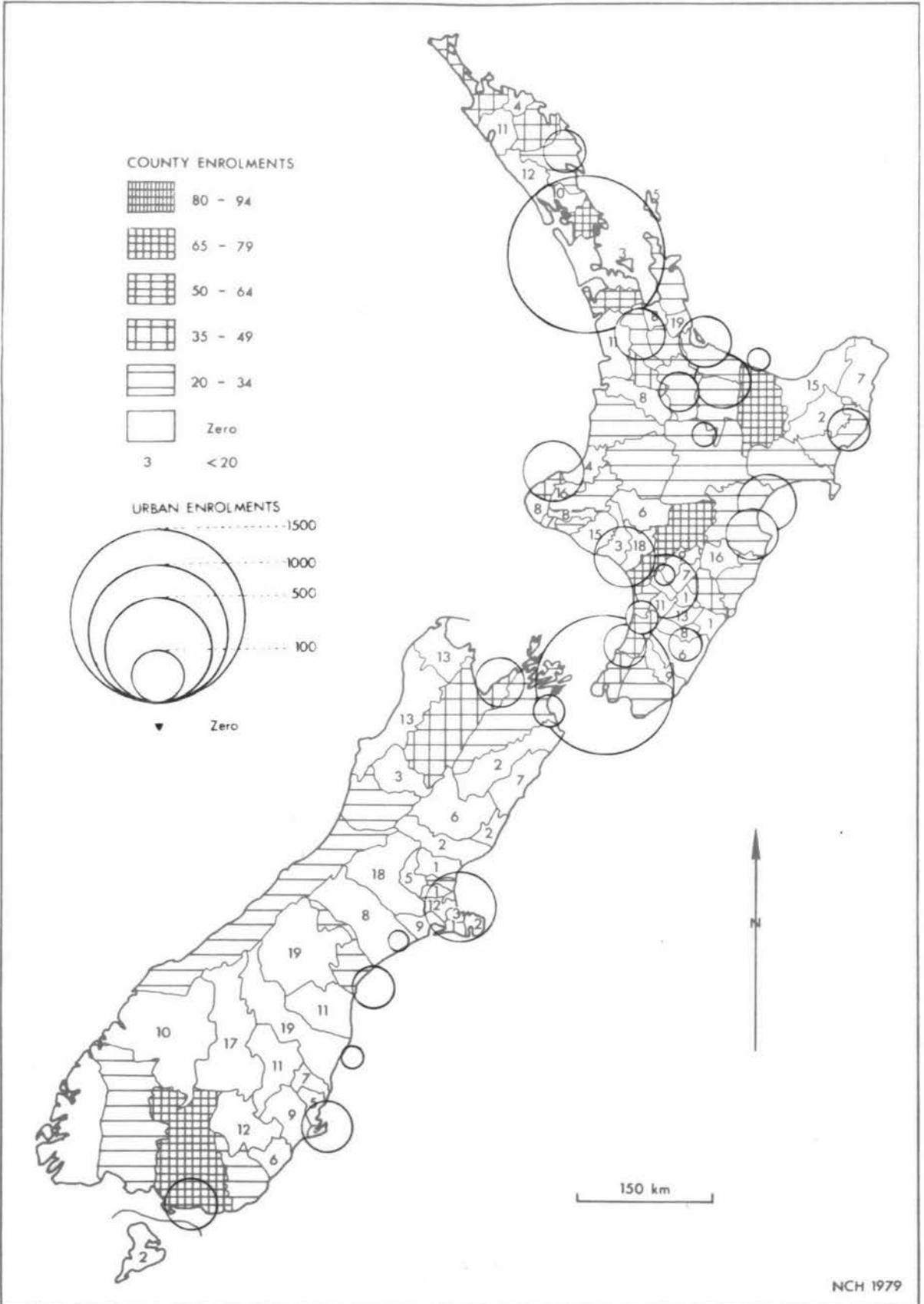


FIG. 4-3e Total Enrolment - 1979: County and Urban

population live within the northern half of the North Island (Holmes, 1976). The 'multiplier effects' caused by this move in population means that this area supports an increasingly larger proportion of the susceptible population. Between 1971 and 1976 enrolment numbers increased by nearly 3000. Six urban areas each recorded enrolments of between 100 and 200, while Wellington had 783 and Auckland had 912. The Whakatane, Rangitikei and Waimea counties all had enrolments of between 50 and 100 students. Although the main growth source had always been the urban areas their dominance in the enrolment patterns was now clearly visible (Fig. 4-3d). Urban areas had 68 percent of the enrolments, while Auckland and Wellington together accounted for 32 percent of the total enrolments.

Although in 1979 there are still 66 counties each recording less than 20 extramural enrolments growth is being maintained. Counties within close proximity to Palmerston North, however, have experienced decreases not purely as a factor of depopulation but also because of University administration. Some students who would previously have been on the Extramural roll have now become part of the Internal roll but are exempt from lectures. Urban areas now account for 71 percent of the enrolment population with the six university cities supporting 46 percent of all enrolments. Auckland and Wellington together have 37 percent of the total enrolments (Fig. 4-3e).

THE INFLUENCE OF DISTANCE ON ENROLMENT

To test the second major hypothesis that there is a negative relationship between distance from Palmerston North

and enrolment a number of conditions were noted. Although Extramural Studies is primarily a correspondence course, and as such should attenuate the distance-decay factor, the majority of students are expected to attend vacation courses at Massey University. Enrolment totals also show that the South Island is under-represented, thus it could be argued that distance is an important factor in a student's decision to study extramurally.

Johnston (1973) in discussing the 'system' as an innovation channel states that two spatial processes of diffusion are usually hypothesised. The first suggests a distance-decay pattern as the innovation spreads outwards across space from its origin, perhaps uniformly in all directions but more probably warped by the form of the transport and communication networks. In the second process the path of the innovation follows the main links of an urban system and is thus hierarchical.

Because the extramural student is, on average, older than the internal student, and because the majority are in full-time employment and also married with family commitments distance factors should rank relatively high in the decision-making process, for overcoming distance involves cost and covering distance involves time. Thus distance not only constrains information but also opportunities. Oberg (1976) postulates that a simple measure of distance from different points to a supply point does not represent the real investment in travelling time because individuals differ in their mobility, while Sheppard (1979) suggest that estimated distance-decay functions will vary as spatial

structure alters. He says that comparability of the willingness to travel in different regions, or in the same region at different time periods, is impossible unless the bias to spatial structure is removed.

By selecting to measure enrolment versus simple distance one has simply indicated the distance that has to be travelled and the relationship of enrolments to this. When enrolments were plotted against straight line distance from Palmerston North the correlation coefficient approached zero (-0.079). In reality travelling patterns are adapted to the difficulties involved in making the journey - a point which has more emphasis when one considers that of the sample population some 41 percent live within 25 kms of their nearest university. Time, however, varied according to the city and the method of transport. Some 23 percent were within 25 minutes travelling time of their nearest university while 57 percent considered that it would take them approximately an hour's travelling time. These estimates should be considered with some caution for they represent only a perceived conception of distance and time, but perception is itself important in an individual's decision to become engaged in an activity.

Since spatial interaction involves the interrelation of locations usually in terms of movement of people or communications (Morrill, 1974) a more realistic measure is to look at interaction and see if it does vary inversely with distance between locations. The index, population over distance (P/D) can be used to represent a 'demographic gravitational field; (Warntz, 1960). Population potential

is a measure of accessibility to the total population and is dependent on numbers of people and their distances apart. The use of this definition assumes that although distance taken by itself showed no relationship with enrolment, the interaction of population would indicate those areas which are over- or under-represented.

Regression analysis over all areas again indicated a strong relationship ($r = 0.935$), although Auckland and Wellington had now reversed their position on the regression line. Whereas in the consideration of enrolments and population only Wellington had been over-represented it now displayed a large negative standard residual (-5.01) while Auckland had swung to a large positive standard residual (8.69). Dunedin also showed a large positive standard residual (2.26) while two areas close to Palmerston North - Feilding Borough and Oroua County - showed large negative standard residuals (-4.01 and -2.05 respectively). As for population the measure of correlation was systematically changed, but at all stages a good relationship was sustained. The only negative relationship occurred when the Wellington area was disaggregated and P/D was taken between 240 and 220 for urban centres. This involved seven North Island centres. Napier, Hastings and Upper Hutt all showed enrolments greater than expected while Hamilton, Levin, Masterton and Porirua exhibited less than expected enrolments. The correlation coefficient was, however, very weak (-0.217) and did not support the hypothesis for distance-decay.

Three further scattergraphs (Figs. 4-4a to 4c) show the relationship at urban and county levels. The correla-

FIG. 4-4a

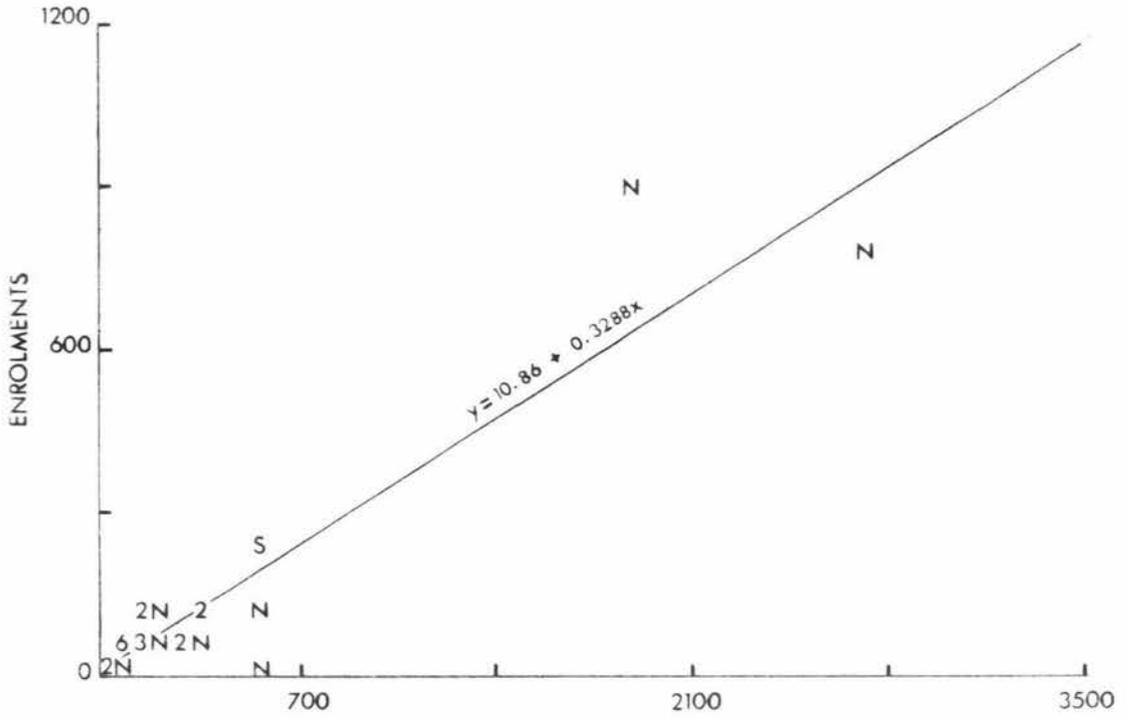
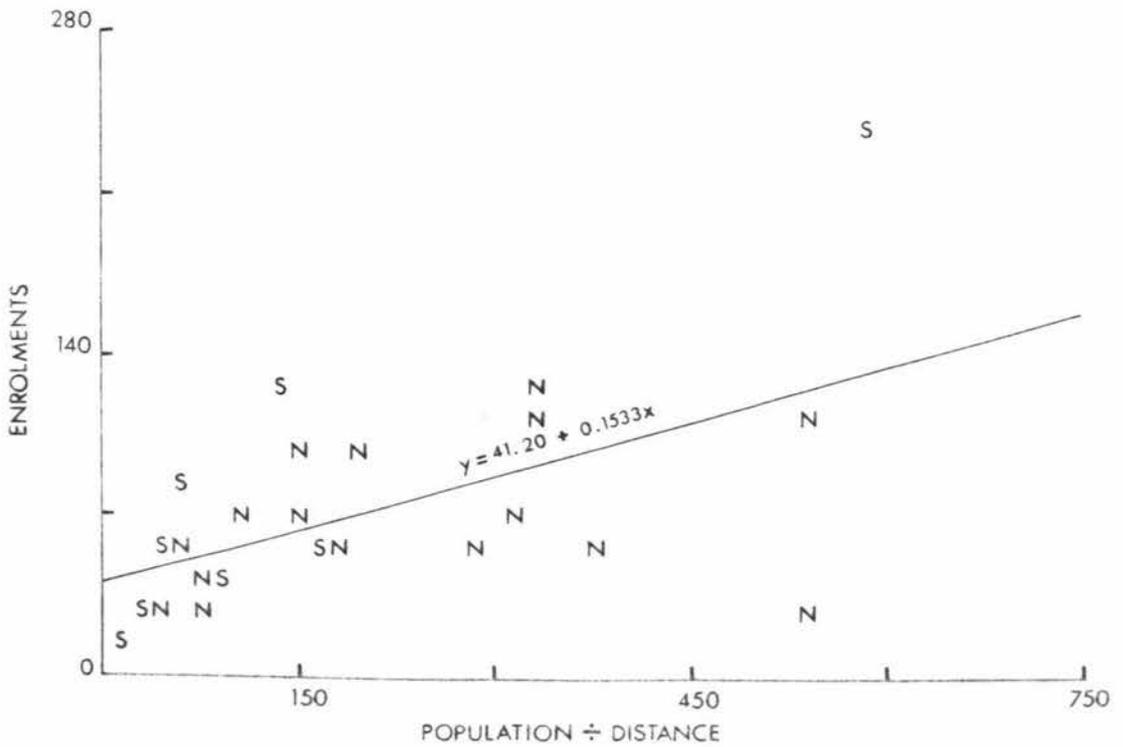


FIG. 4-4b



The Relationship between Extramural Enrolment and Urban Interaction

tion for urban areas (0.935) was identical to that for all areas (Fig. 4-4a). When Auckland and Wellington were omitted (Fig. 4-4b) a more moderate relationship occurred (0.560) and when only the counties were measured (Fig. 4-4c) the correlation was again moderate (0.569). Southland (4.39), Rangitikei (3.29), Waimea (2.89), and Whakatane (2.49) all displayed high positive standard residuals, while Oroua (-2.87), Kairanga (-2.28) and Pahiatua (-2.01) displayed high negative standard residuals. From the previous discussion on population growth and decline these relationships were not unexpected.

This analysis shows conclusively that the hypothesis that there is a negative relationship between distance from Palmerston North and extramural enrolment can be rejected. It does not, however, explain why the South Island remains under-represented. It can only at this stage be conjectured that social reasons are more strongly related to the situation and that enrolments are definitely related to the type of population within an area. At all levels of the regression analysis there has been a tendency for areas to move further and further from the regression line as population increases and this fan-like structure makes prediction at the upper limits difficult.

THE PATTERN OF REGIONAL GROWTH

Growth changes within regions themselves should also be considered. Counties and their corresponding urban areas were aggregated to form regions approximating as closely as possible the original extramural areas (Appendix F). The percentage enrolment change for each time period was then

calculated (Fig. 4-5). The initial growth period showed substantial increases in most areas. Incorporated in the framework of the extramural growth pattern is the addition of papers to subjects and the introduction of new subjects. As Stage I led into Stage II units more would-be students could now participate. Taylor (in Piper and Glatter, 1977) describes how Miller (1973) has argued that a reformulated Say's law suggests that useful supply produces its own demand, and good services create demands that are in practice very difficult to meet. Some of the extramural enrolments of this period were a definite response to backlog demand. Centres of major urban populations grew the most rapidly. Areas within middle distance of Palmerston North did not experience such substantial increases because they had already started off with considerable enrolment numbers. The Manawatu region, however, recorded the largest increase. The Coromandel's high percentage ranking though, is partly a function of its small population.

During the second time period the majority of counties showed only small increases, although Northland's numbers rose significantly. The Waikato, on the other hand, recorded a decrease. The reason can be attributed to Hamilton's large drop in enrolment numbers which were brought about by changes in administration at the University of Waikato. McLaren (1974) discusses how the Waikato contextual approach to university education did not sit easily alongside the unit system of the other New Zealand universities. Part-time students were prevented from taking individual papers, hence the large numbers of enrolments from Hamilton in the

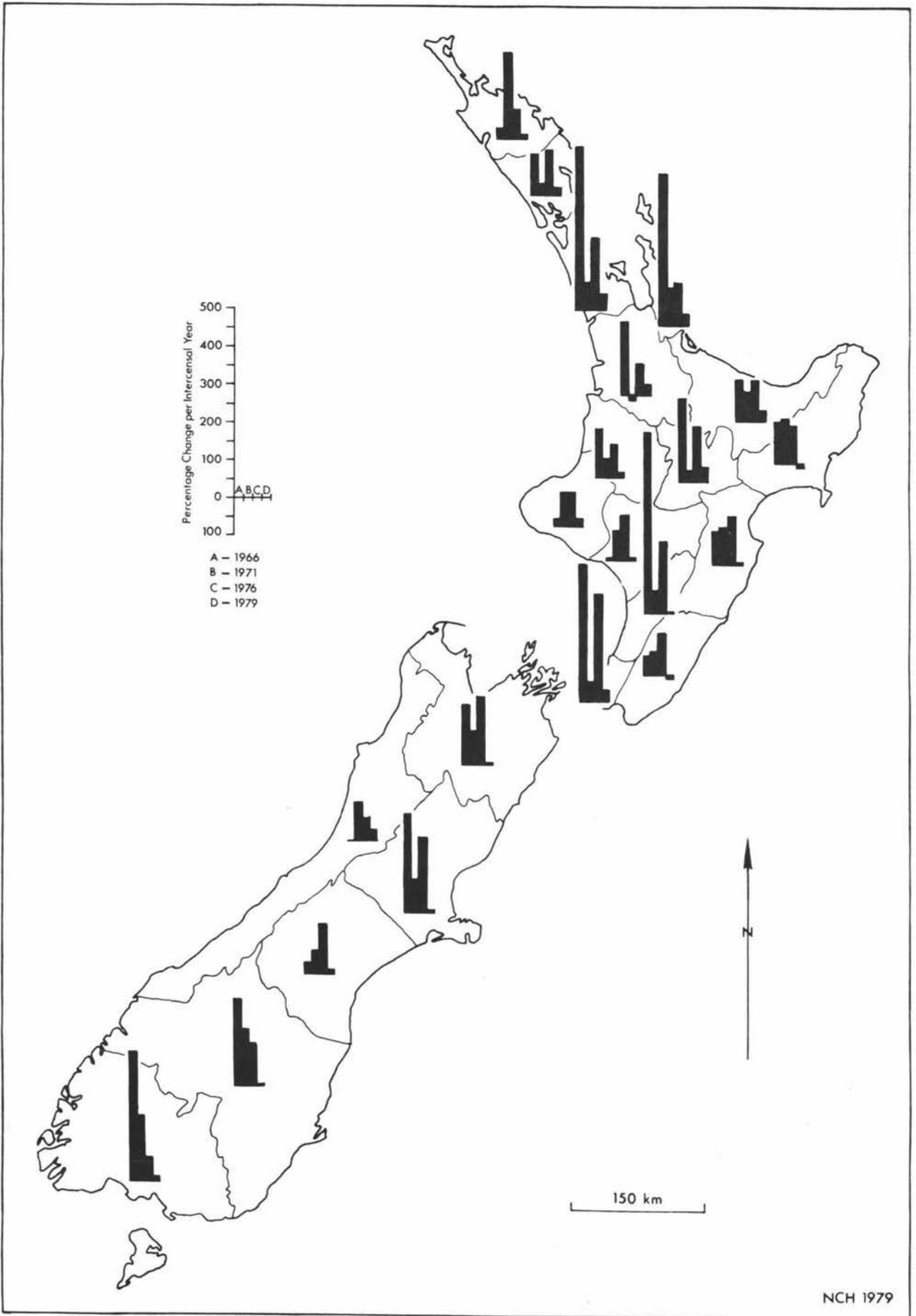


FIG. 4-5 Regional Percentage Enrolment Change

first few years. When a more conventional pattern was substituted Hamilton's enrolment numbers dropped.

The 1976 increase can partly be accounted for by changes in Bursary regulations.² This, together with a more active interest in the place of continuing education and a woman's role in higher education spurred enrolments everywhere. Over the last three year period growth has stabilised. Some areas, notably the East Coast and the Wairarapa, show decreases, although this could smooth out over the next two years. It would appear, however, that most areas are sustaining growth. The impact of bursary regulation changes has passed and enrolment patterns have settled but, nevertheless, possibility of change is ever-present. The introduction of 300-level papers in 1980 will net a certain percentage who may otherwise not have continued as extramural students and some will be reclaimed from an 'enforced' break in study. On the other hand, price rises in travel and accommodation, the increasing cost of textbooks, and the predicted changes in fees regulations may exclude some students who would otherwise have enrolled. Thus, the state of the national economy may well be reflected in future enrolments.

A brief examination of the 1976 national distribution of those holding tertiary qualifications revealed very little variation between sexes and had an almost perfect relationship to size of population ($r = 0.990$ for males and $r = 0.987$ for females). A slight variation occurred, however, when the correlation measure was limited to a population size of 40 000 ($r = 0.882$ for males and $r = 0.957$ for females). As evidenced in the sample population this

change is probably related to the numbers of females holding nursing and teaching qualifications. Of the 62 percent of the sample population holding non-university tertiary qualifications, 66 percent of these were held by females. A significantly greater proportion of males hold university qualifications, however, and, in general, they pursue occupations in the larger centres.

The pattern of extramural enrolment is, therefore, definitely a function of population size and, as the national population continues to become concentrated in the largest centres it is inevitable that extramural enrolments will become more concentrated. Enrolment fluctuations in the smaller centres should be expected for the demographic character and industrial composition of an area also has an important bearing on the number of enrolments. Smaller centres, which often act as 'stepping stones' in the process of socio-economic mobility, frequently do not have a sufficient core of students to sustain expansion.

The process of distance-decay, however, was rejected as a major factor in inhibiting extramural study. Because the programme is a service delivered primarily by mail the location of Massey University in space can be considered as relatively unimportant.

FOOTNOTES

- 1 For the year 1979 the N.Z. Technical Correspondence Institute had some 34 647 enrolments and the Advanced Studies for Teachers Unit of the Dept. Education's Correspondence School had some 1319 enrolments.
- 2 Fees Bursaries are awarded to students following part-time or full-time courses who have qualified for entrance to the university. These bursaries provide payment for tuition fees.

CHAPTER 5

THE SPATIAL DISTRIBUTION OF
SUBJECT ENROLMENTS

The major research hypothesis related to subject growth is based on the assumption that there is a relationship between the geographical area and the proportion of students enrolled in individual subjects. In order to examine the hypothesis each subject is followed through its diffusion process using a series of maps and graphs. The non-parametric Chi-square test is then used as a formal decision making aid to verify the research hypothesis. The argument in support of using significance testing in a non-sampling situation can be summarised as follows. The expected frequencies are calculated on the basis of proportional allocations. In this situation the numbers enrolled in a subject are considered in relation to the total number of selected subject enrolments in an area. If the test statistic allows the rejection of the null hypothesis it can then be argued that the difference between expected and observed frequencies is sufficiently large to be unlikely to be due to random variation of many self-cancelling variables and more likely to be due to the effects of specific and identifiable variables.

SELECTED SUBJECT ENROLMENTS

In 1960 English, History and Education (BA) were all available at the Stage 1 (100) level. English and History can be considered as teaching subjects and Education as a

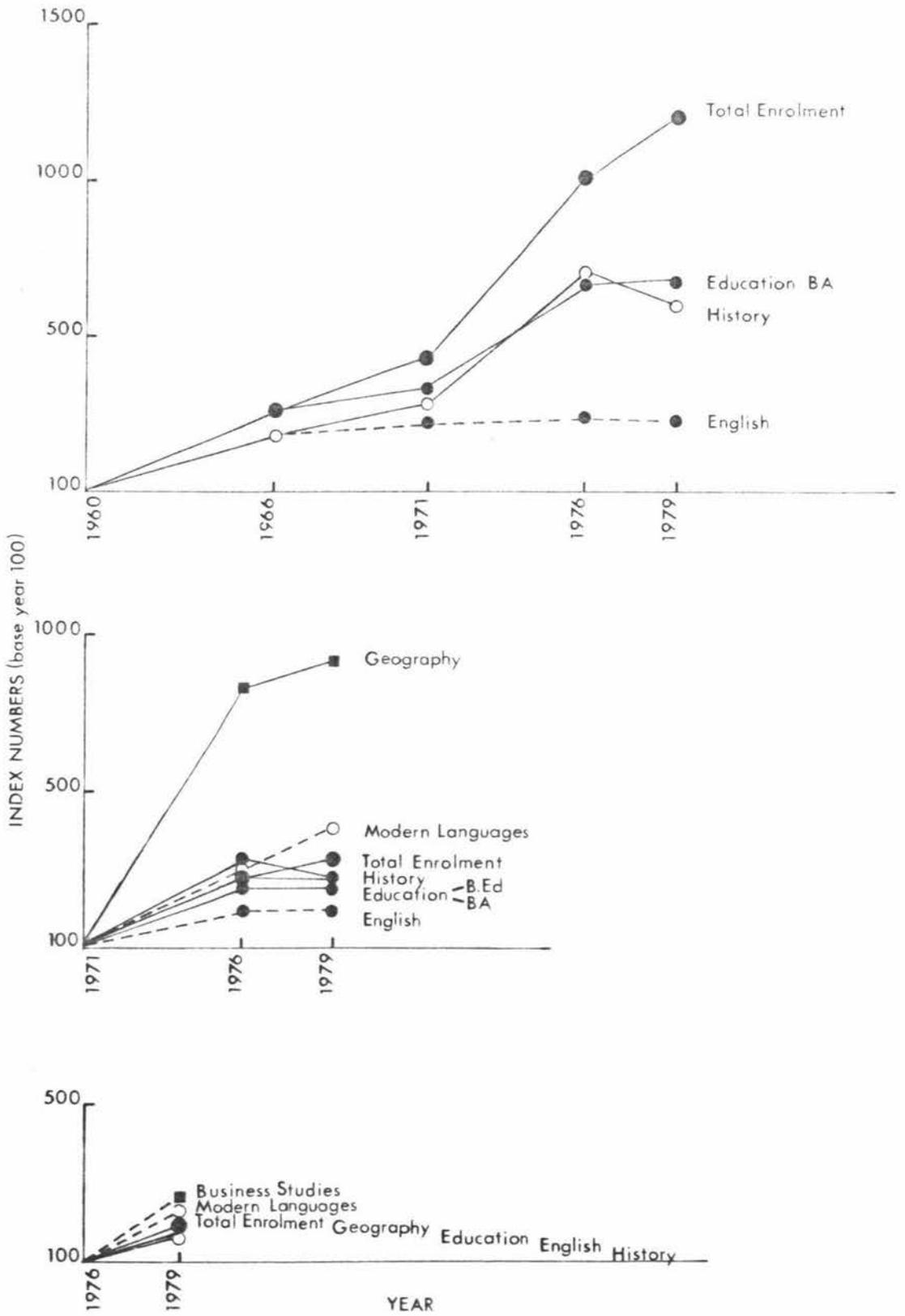


FIG. 5-1 Selected Extramural Growth Rates

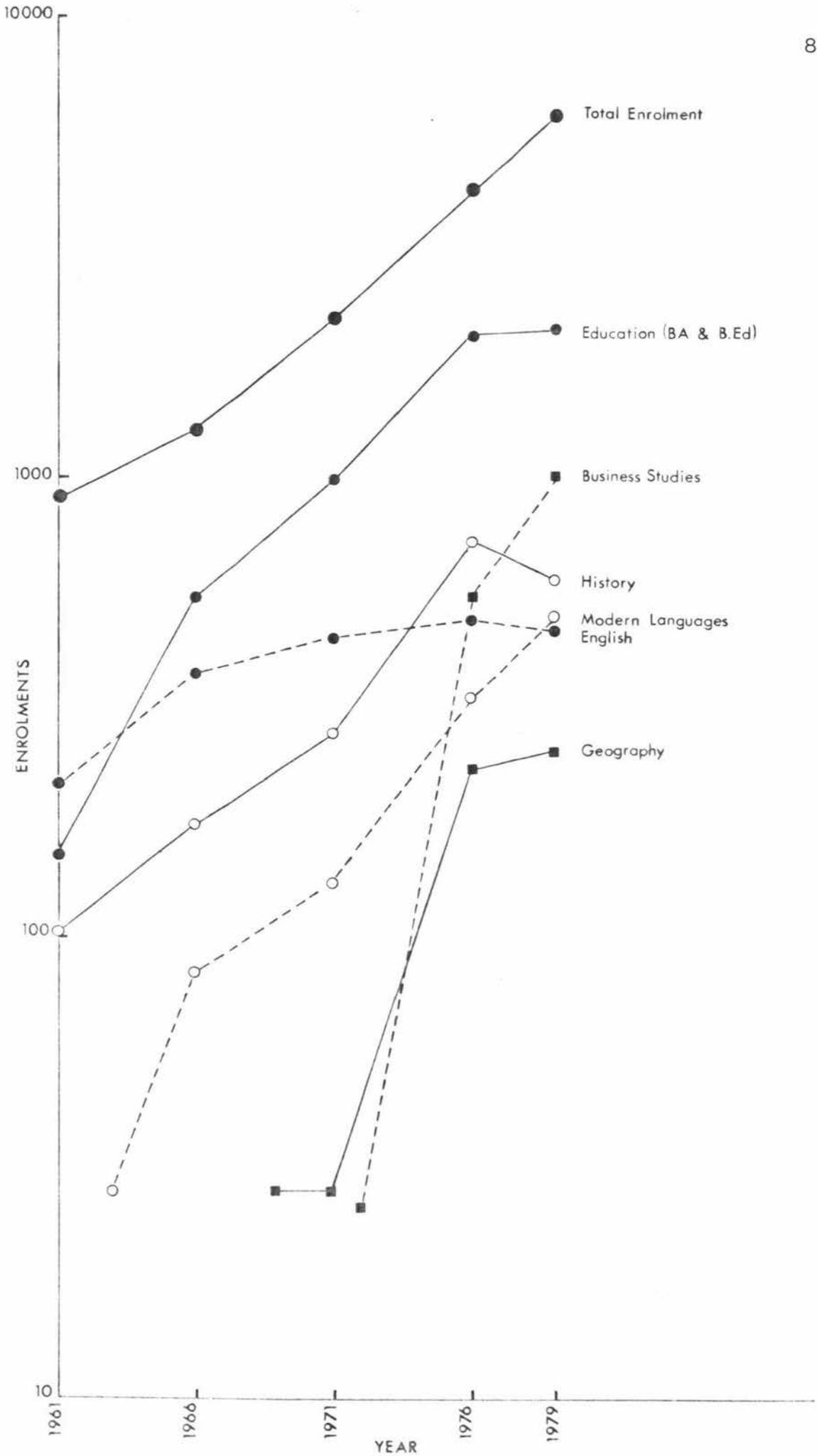


FIG. 5 - 2 Comparative Extramural Subject Enrolments

theoretically based subject suited to the needs of the majority of students at that time involved in the Extramural programme. Initial enrolments were widespread. Of the three subjects English had the most enrolments, some fifty more than for Education and twice as many as History. The reason can probably be attributed to the fact that at the time English was the basic component of any Humanities or Social Science degree. As such, all students were required to include it in their degree structure. Subjects, however, do not all grow at the same rate as evidenced in Figure 5-1. Any combination of factors, some purely administrative may be responsible. As Figure 5-2 clearly shows initial enrolments may be small. Much is dependent upon the general demand at a specific point in time and upon the university's ability to supply that demand.

English

In 1960 English had over 200 enrolments fairly evenly divided between county and urban areas (Fig 5-3a). By 1966 enrolments had increased by some 73 percent. At Stage 1 most growth was at the urban level but at Stage 2 enrolments were fairly evenly distributed between county and urban areas (Fig. 5-4). The result of this can be seen in Figure 5-3b. Between 1966 and 1971 enrolments continued to be sustained (21 percent growth rate) with most of the growth taking place at Stage 1. All the urban areas were now represented but a noticeable change, which was no doubt a direct result of the decline in enrolments from Ardmore Teachers' College, was the drop in Auckland's numbers (Fig. 5-3c). Figure 5-3d shows a resurgence in

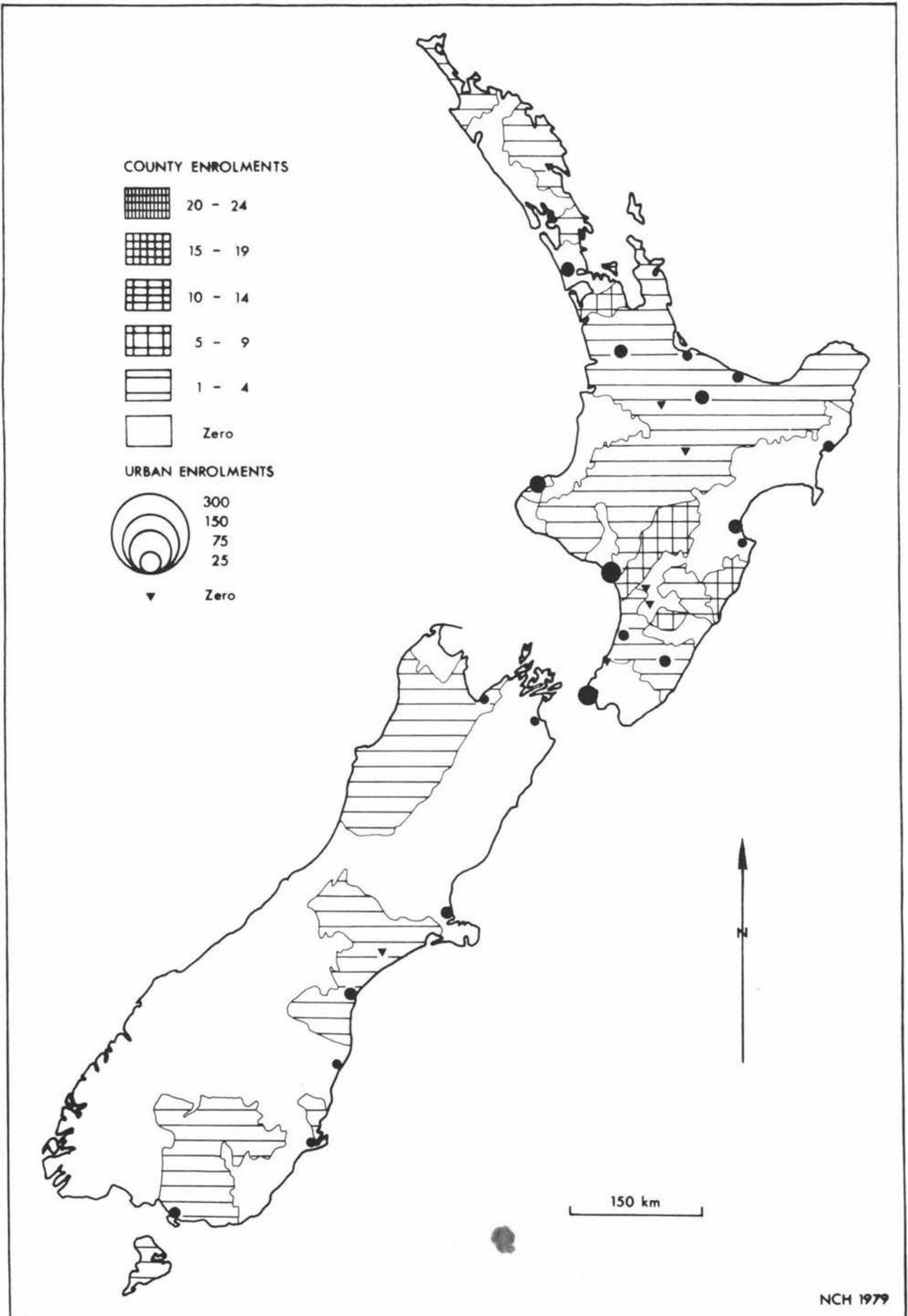


FIG. 5-3a Enrolments in English - 1960

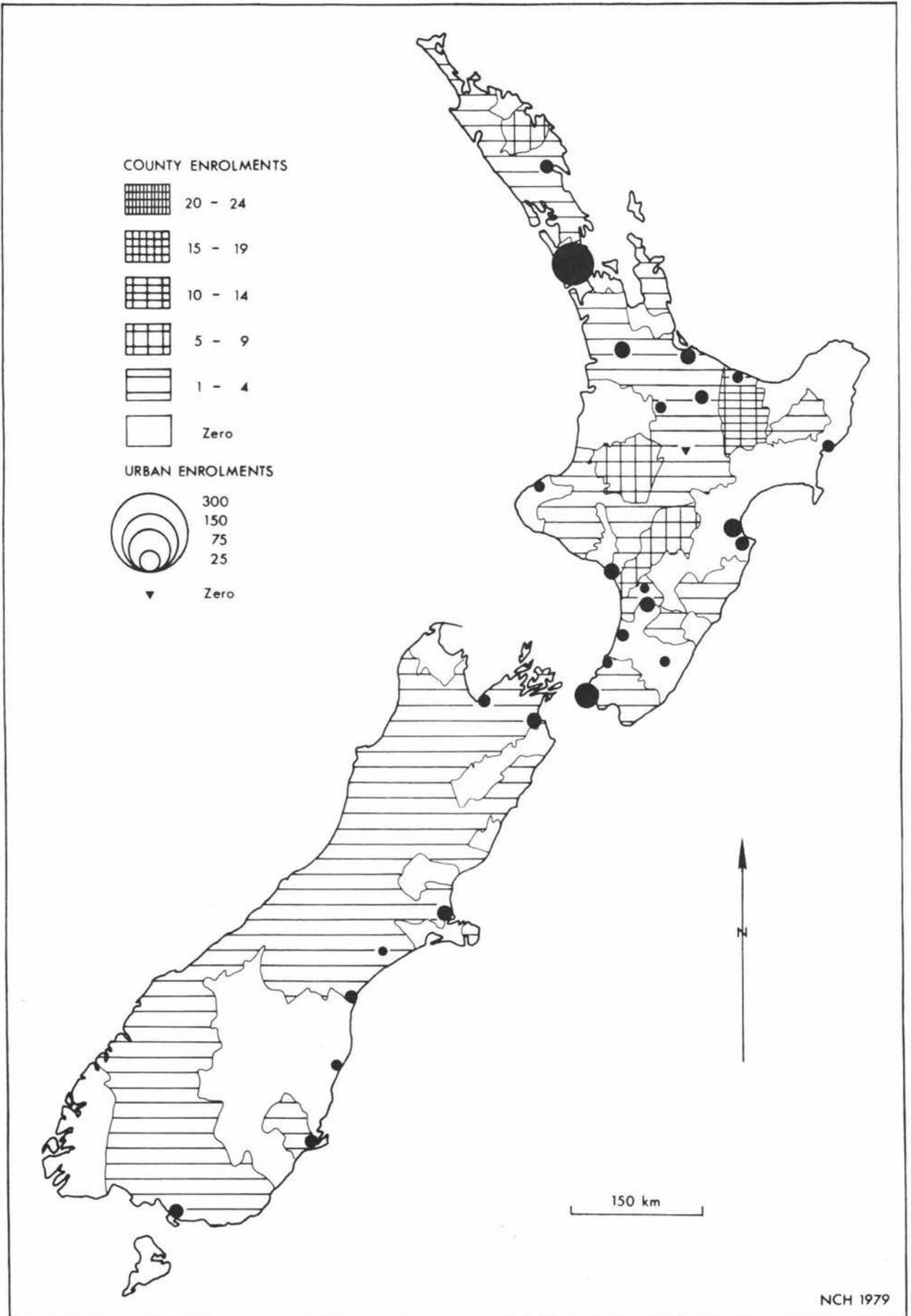


FIG. 5-3b Enrolments in English - 1966

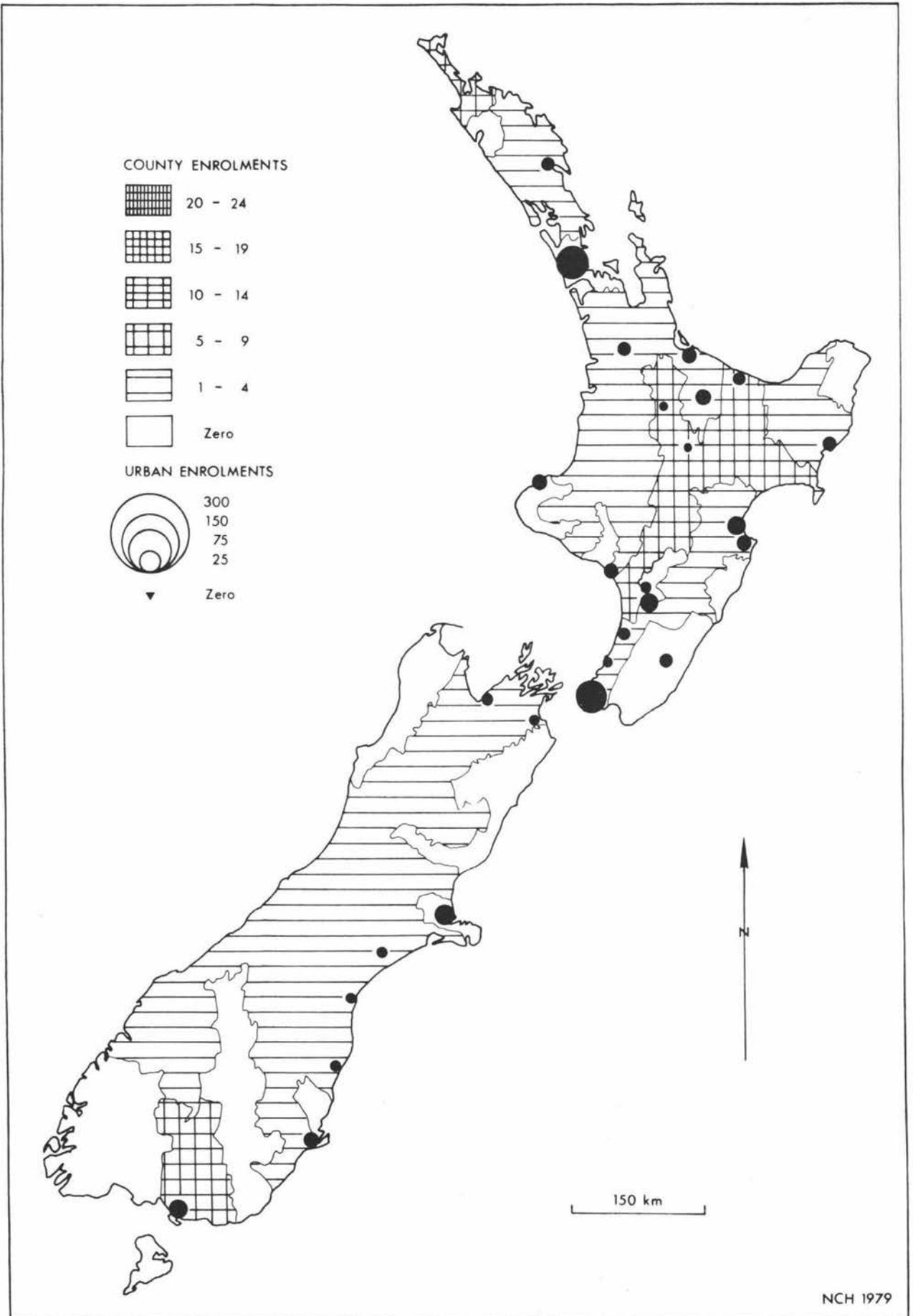


FIG. 5-3c Enrolments in English - 1971

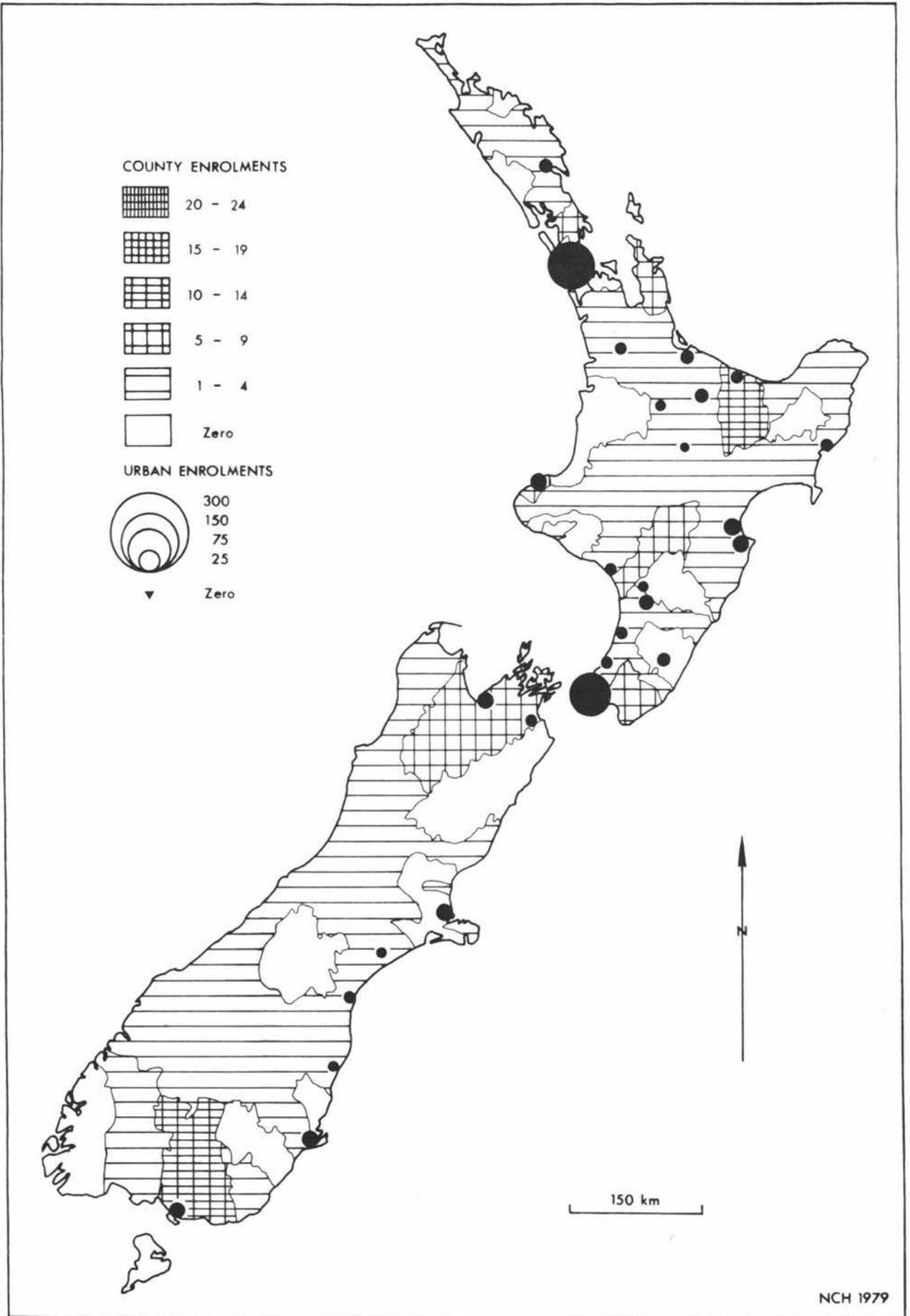


FIG. 5-3d Enrolments in English - 1976

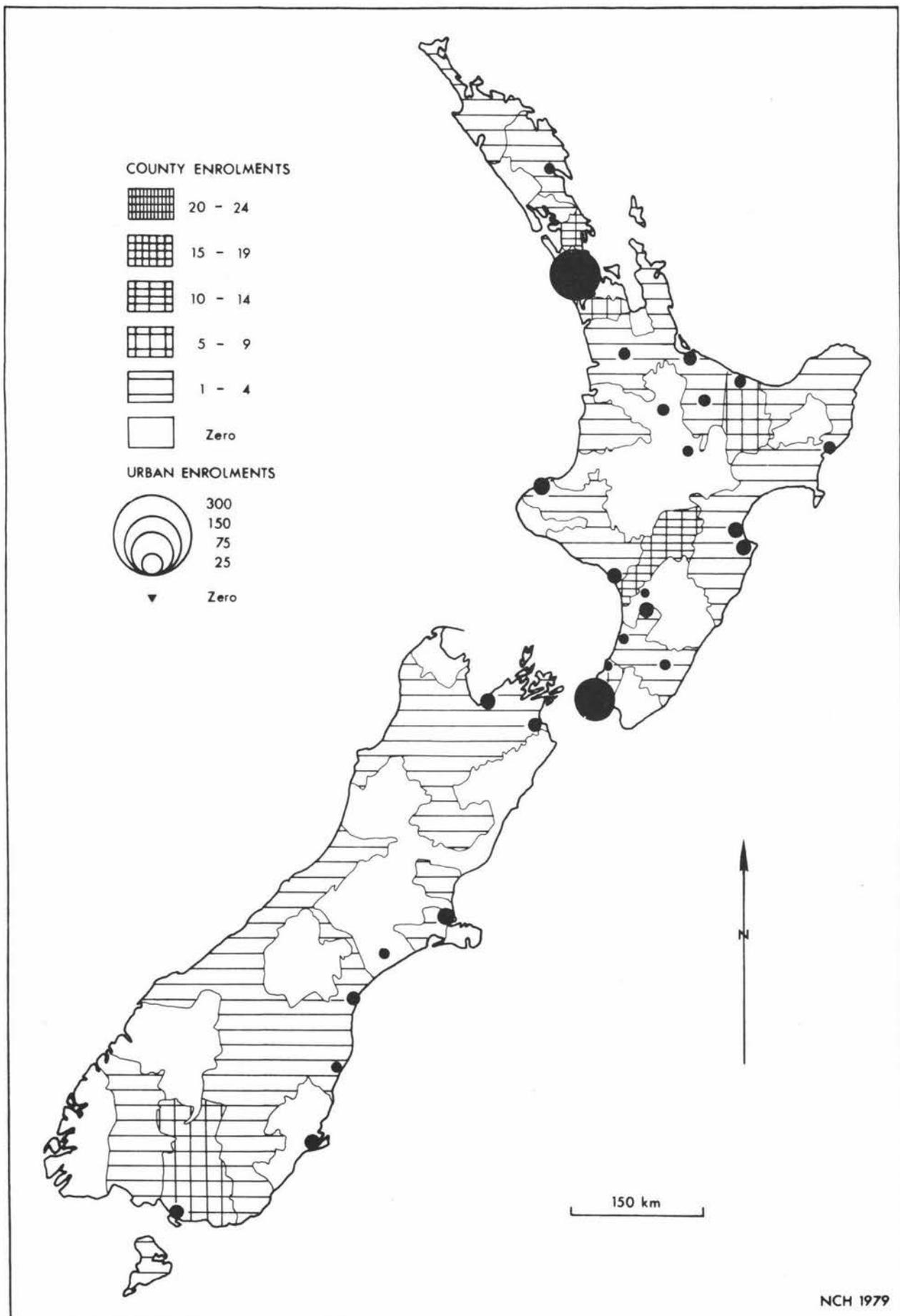


FIG. 5-3e Enrolments in English - 1979

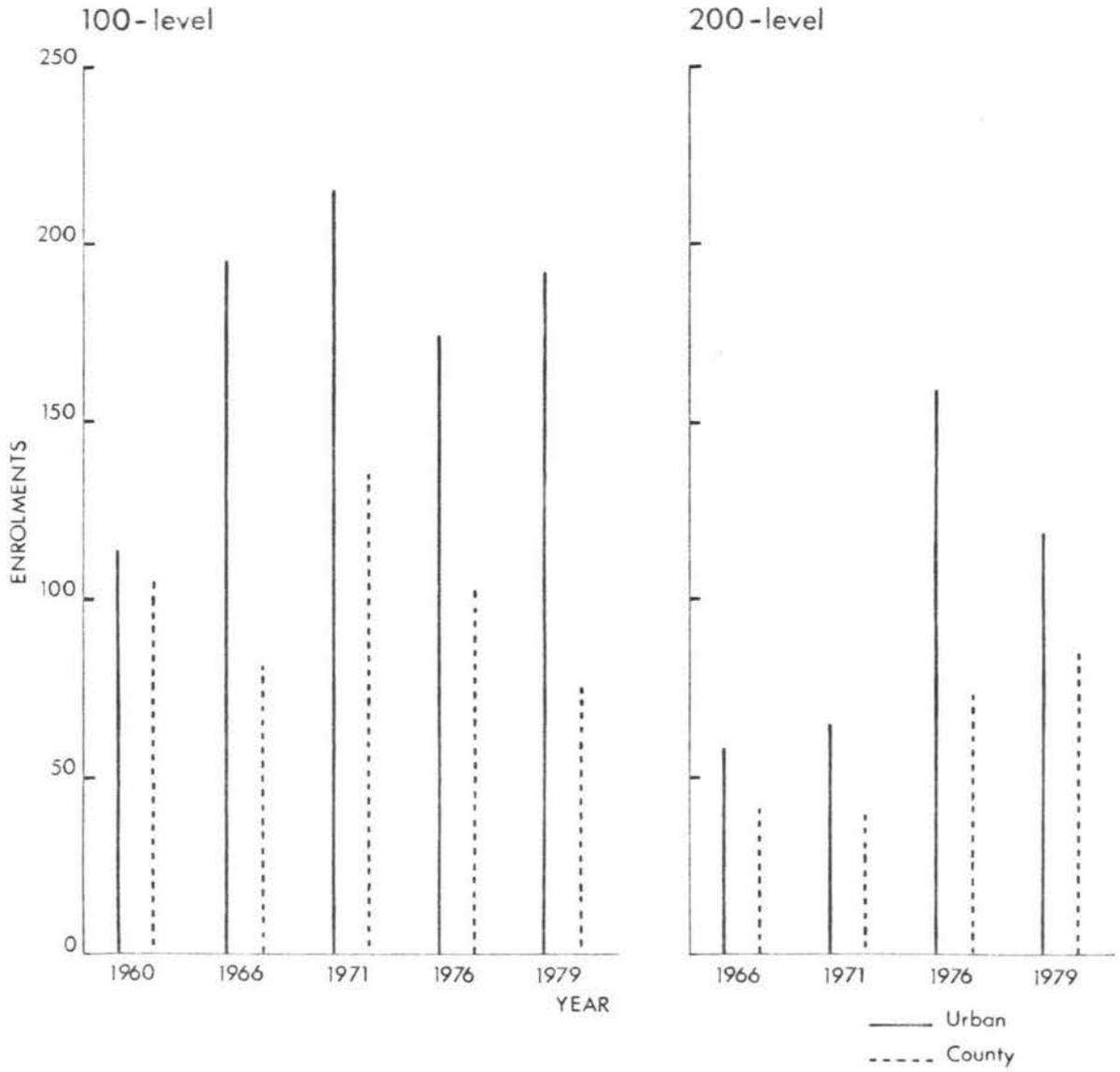


FIG. 5-4 Enrolments in English

Auckland enrolments and substantial numbers in the Whakataane and Southland counties, although growth over the 1971 to 1976 period was being sustained at a lower rate than previously (9 percent). The interesting and important point here is that while numbers dropped at the 100-level they increased considerably at the 200-level (Fig. 5-4). When the paper system was introduced in 1973 the English Department required that the two 100-level papers offered were taken concurrently and consequently deterred a number of students who may otherwise have taken a single paper. Over the last three-year period numbers taking English have actually declined (-6 percent). A considerable number of counties in both islands have no students enrolled, although the urban areas have tended to at least maintain their numbers (Fig. 5-3e).

History

During the first time period (1960-1966) History grew at proportionately the same rate as English (73 percent). Students were widespread and the majority of the main urban areas were represented (Fig. 5-5a). By 1966 considerable expansion had taken place especially in the North Island (Fig. 5-5b). Figure 5-6 shows the steady increase in enrolments in both county and urban areas up to 1971. Between 1971 and 1976 they increased by 162 percent. The establishment of the paper system meant that students had considerable choice in their selection of papers, any 100-level paper qualifying for any 200-level paper. There was, however, a certain degree of fluctuation among county enrolments (Figs. 5-5c and 5-5d). Enrolments for 1979 have,

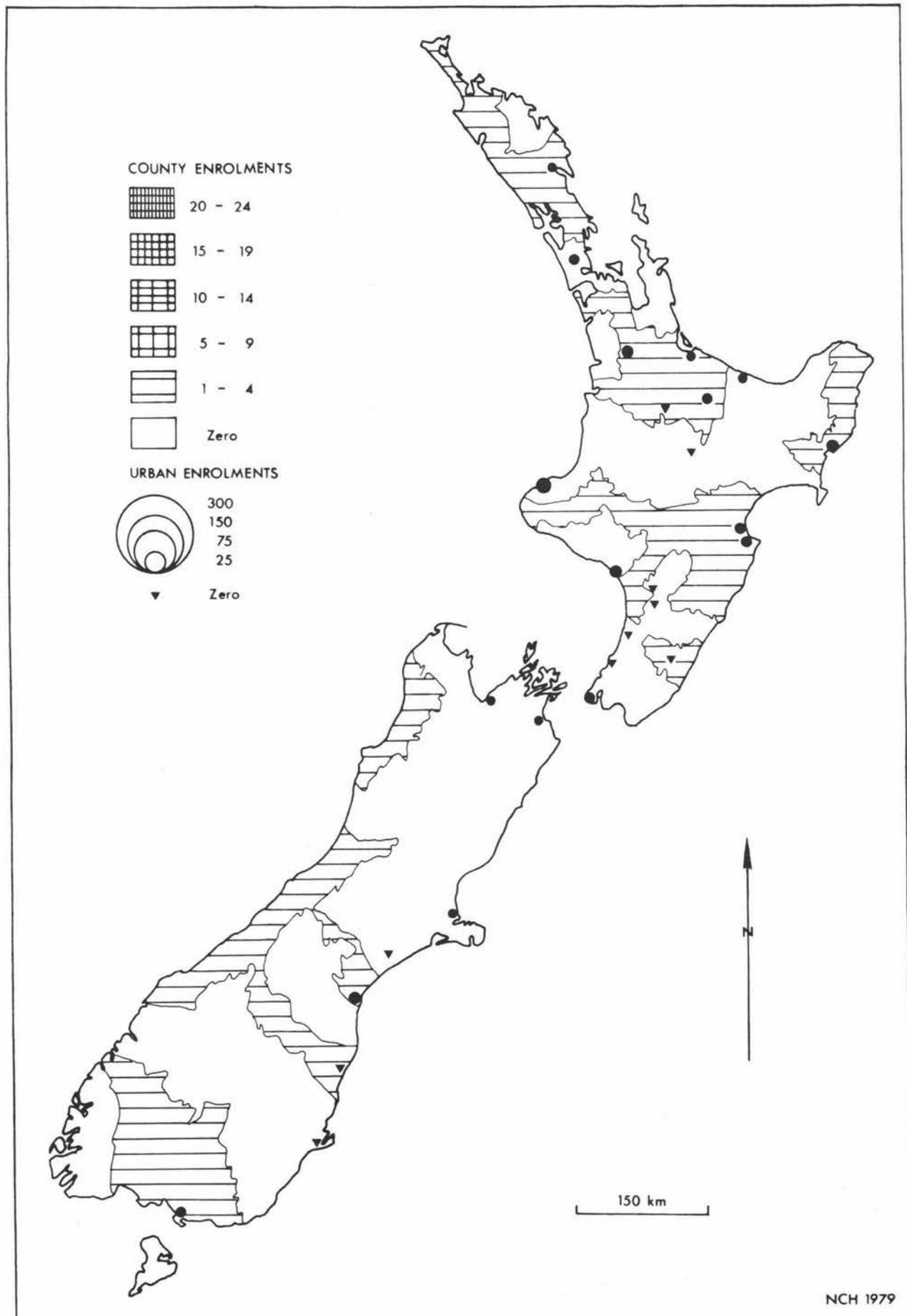


FIG. 5-5a Enrolments in History - 1960

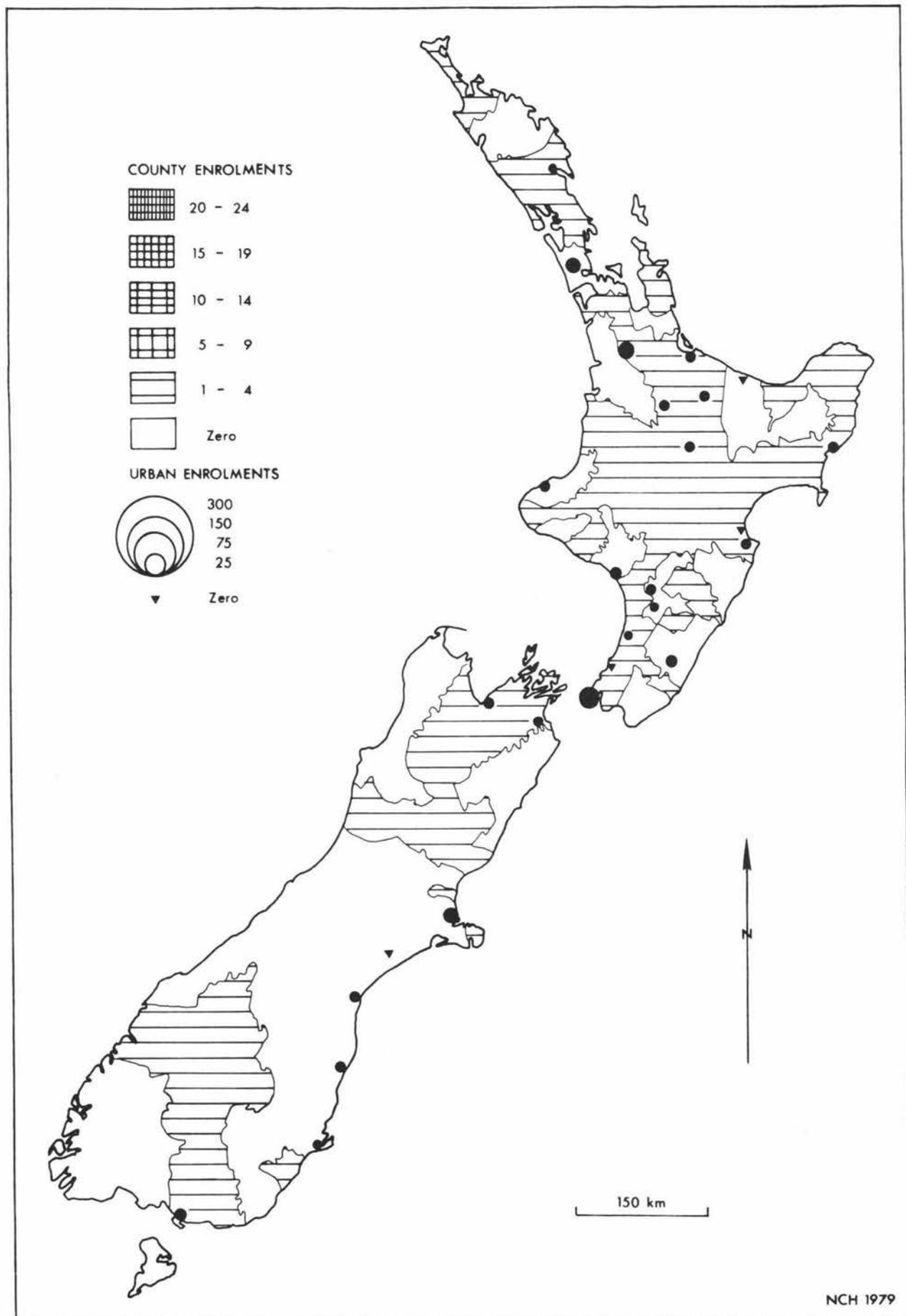


FIG. 5-5b Enrolments in History - 1966

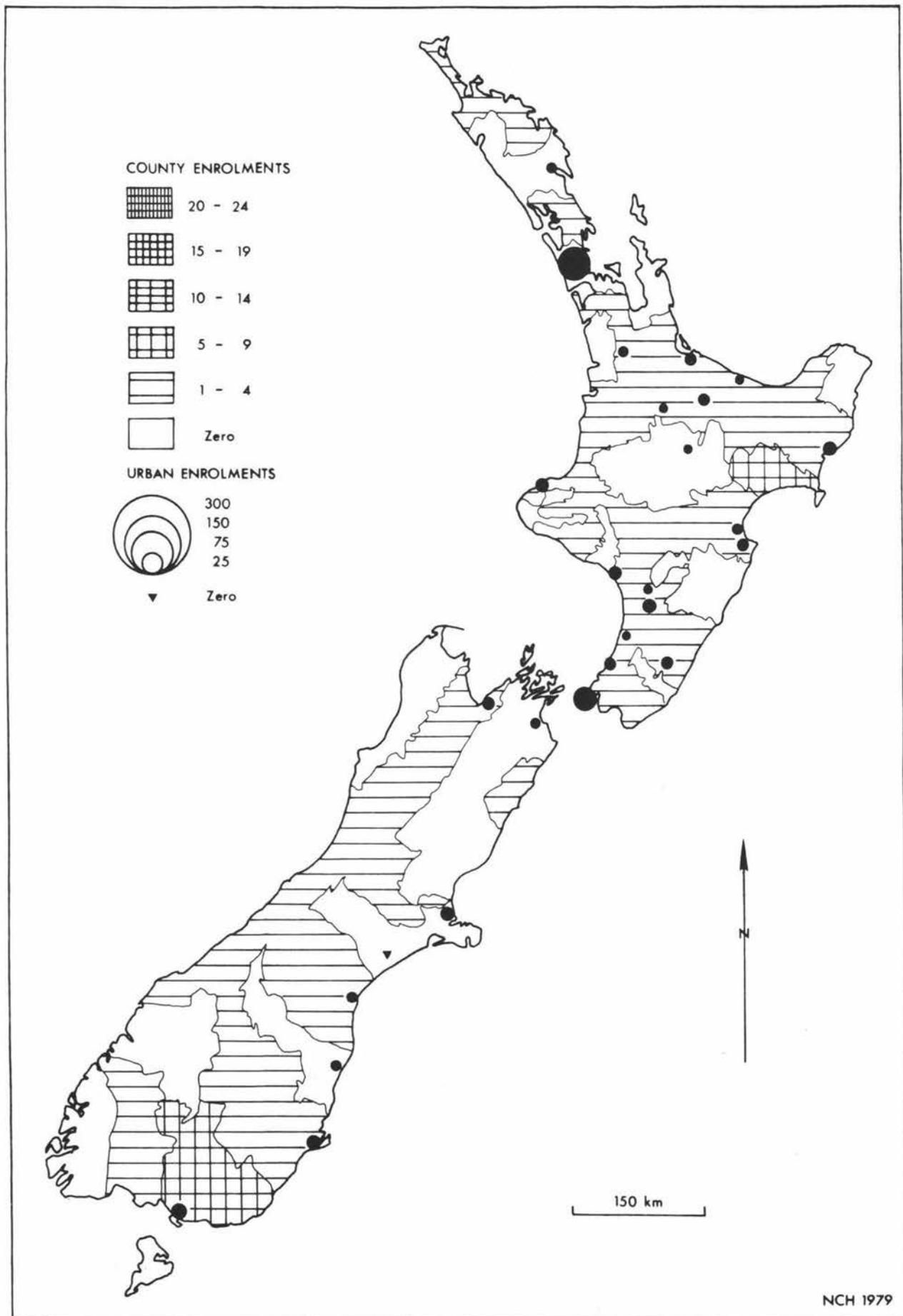


FIG. 5-5c Enrolments in History - 1971

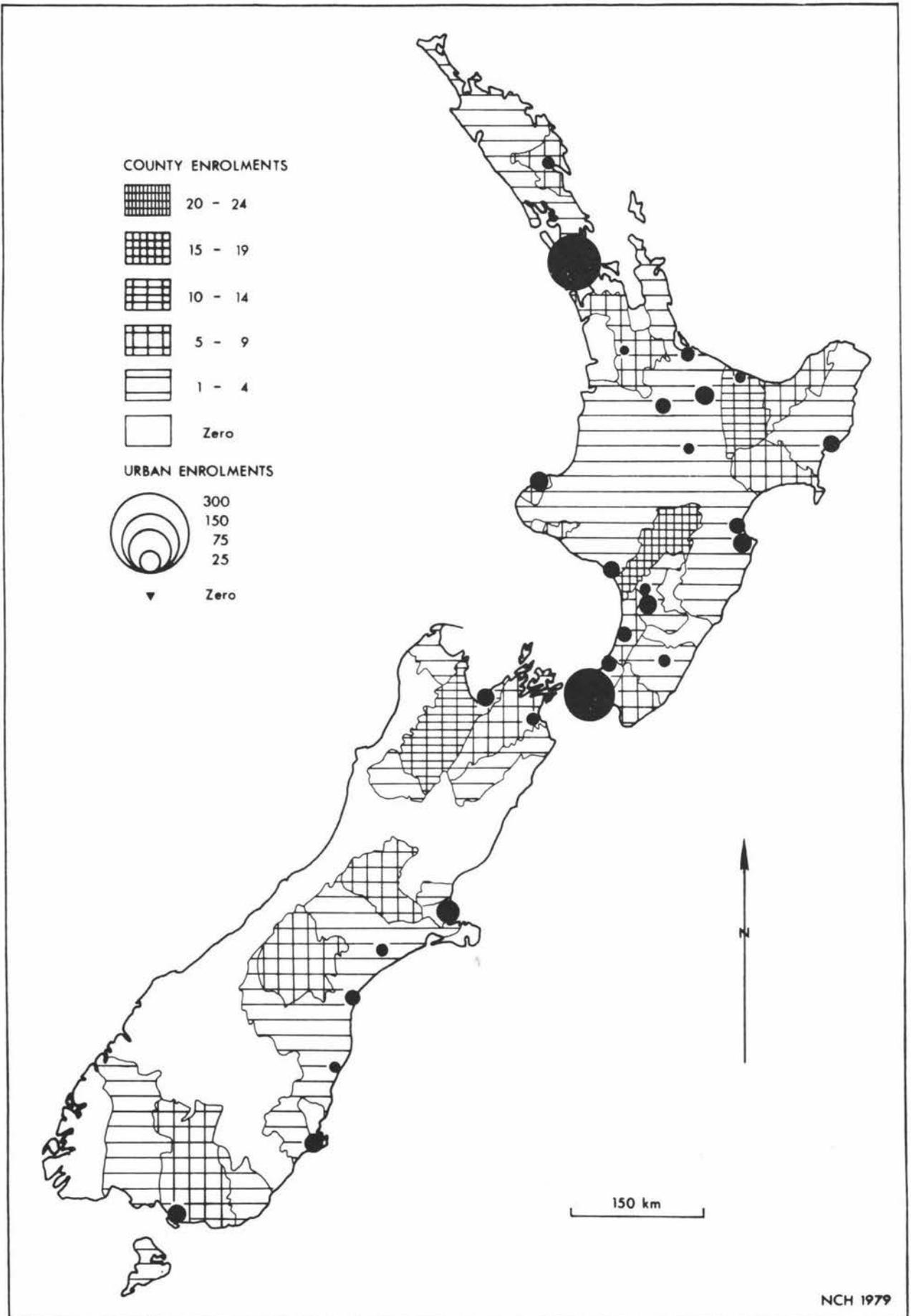


FIG. 5-5d Enrolments in History - 1976

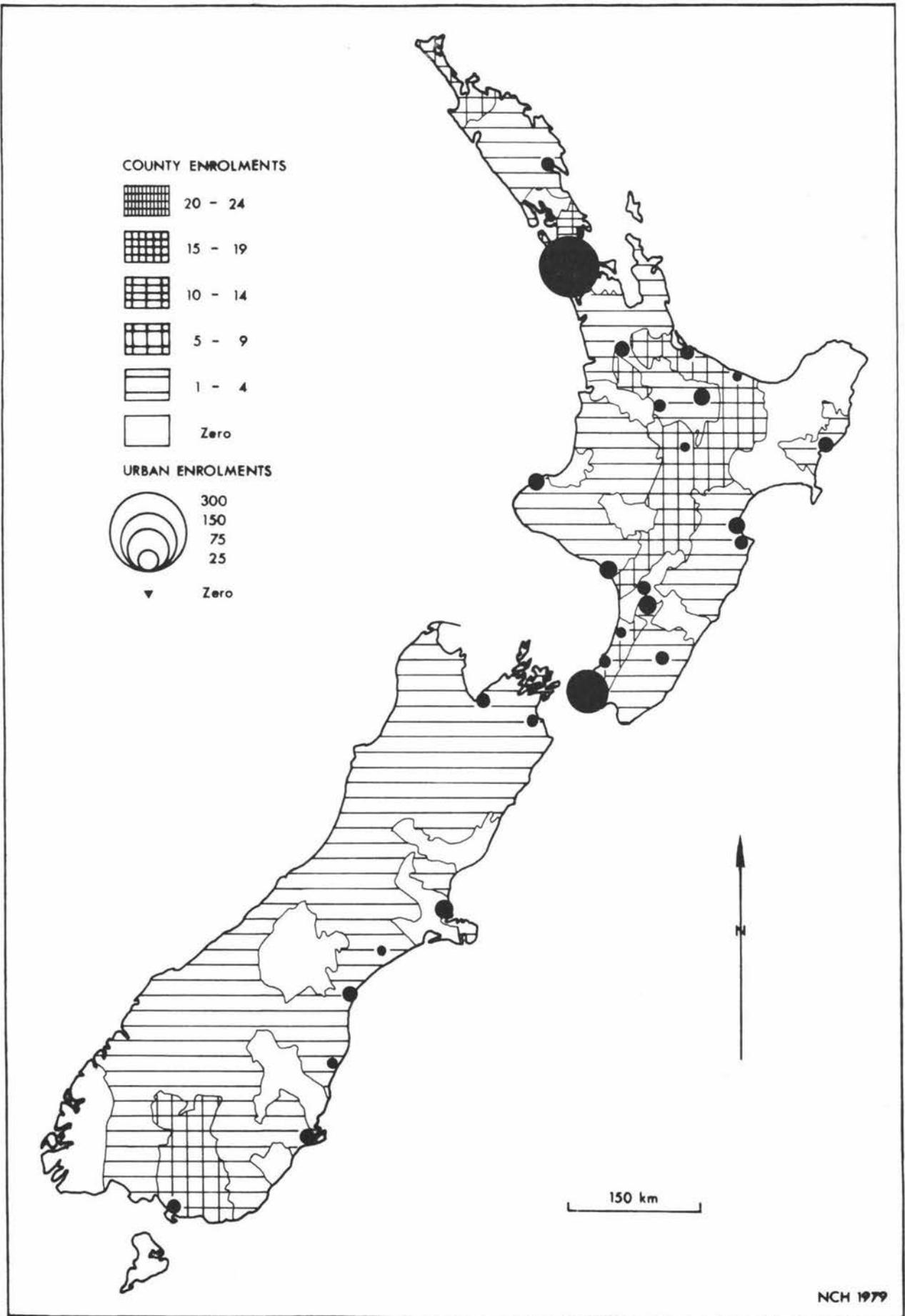


FIG. 5-5e Enrolments in History - 1979

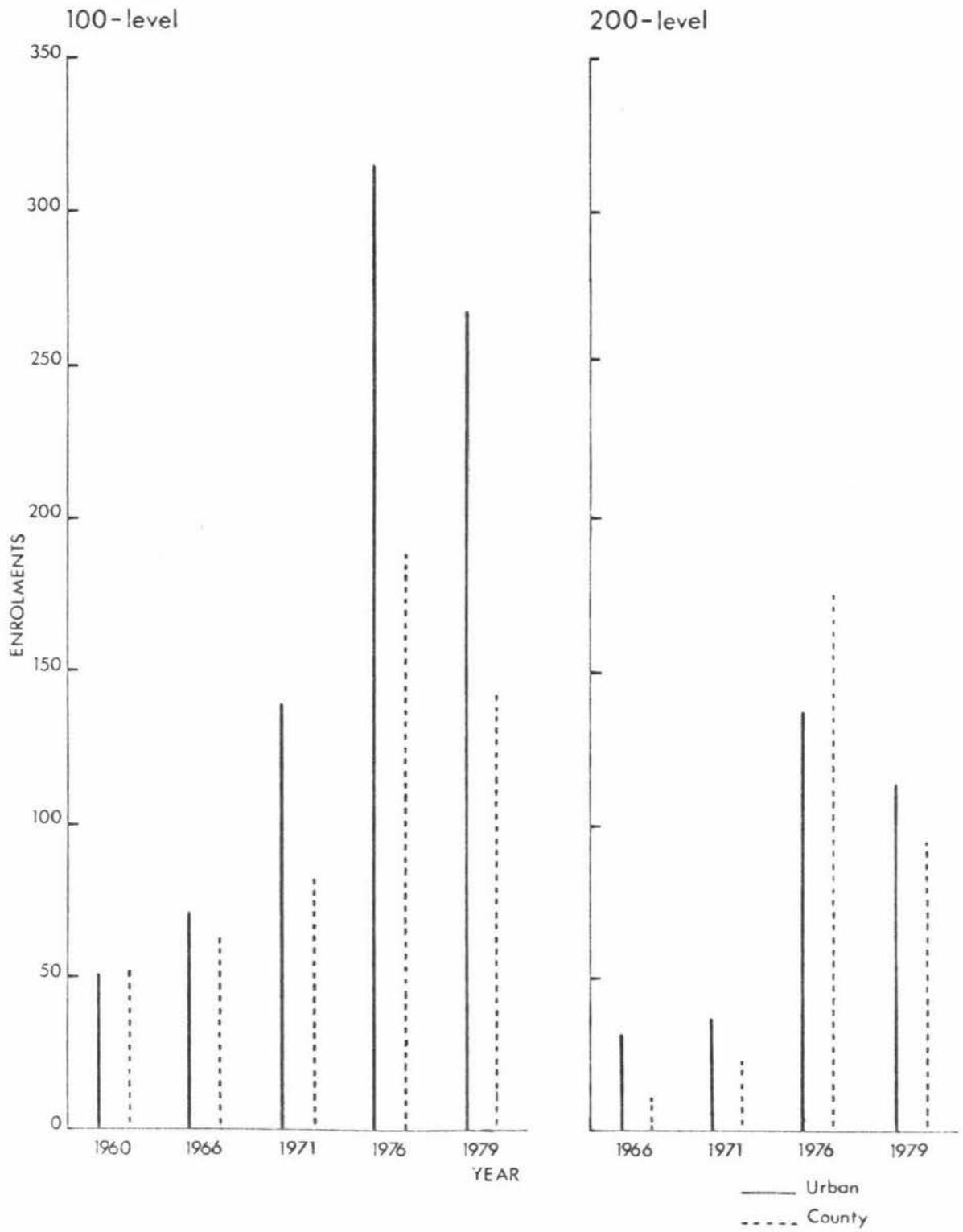


FIG. 5-6 Enrolments in History

like those for English, declined (-16 percent between 1976 and 1979). Enrolments in 200-level papers in the counties show the greatest decrease in numbers (Fig. 5-6). Of the three main metropolitan areas only Auckland is sustaining growth (Fig. 5-5d).

Education (BA)

Education's initial enrolment numbers fell mid-way between those for English and History (Fig. 5-2). Enrolment was generally widespread with the main areas of population represented (Fig. 5-7a). During the first time period enrolments increased by 156 percent. Significant growth, especially in the urban areas had taken place. As with English, students from Ardmere Teachers' College accounted for a high percentage of Auckland enrolments (Fig. 5-7b). By 1971 county enrolments had become more important (Fig. 5-8). Some counties, notably Southland and Rangitikei recorded quite substantial numbers (Fig. 5-7c). The introduction of the Bachelor of Education degree in 1970 no doubt attributed to the increase in county enrolments, for it has as one of its requirements the completion of 100-level education (BA) papers.

Between 1971 and 1976 enrolments doubled, most of it taking place at 100 level. In Auckland and Wellington, in particular, an increasingly greater proportion of the enrolments were from female students. Although the 100-level paper on education and society has become more educationally oriented, the paper on human development has very widespread appeal and since it is acceptable to a number of degree structures is often used as a reserve

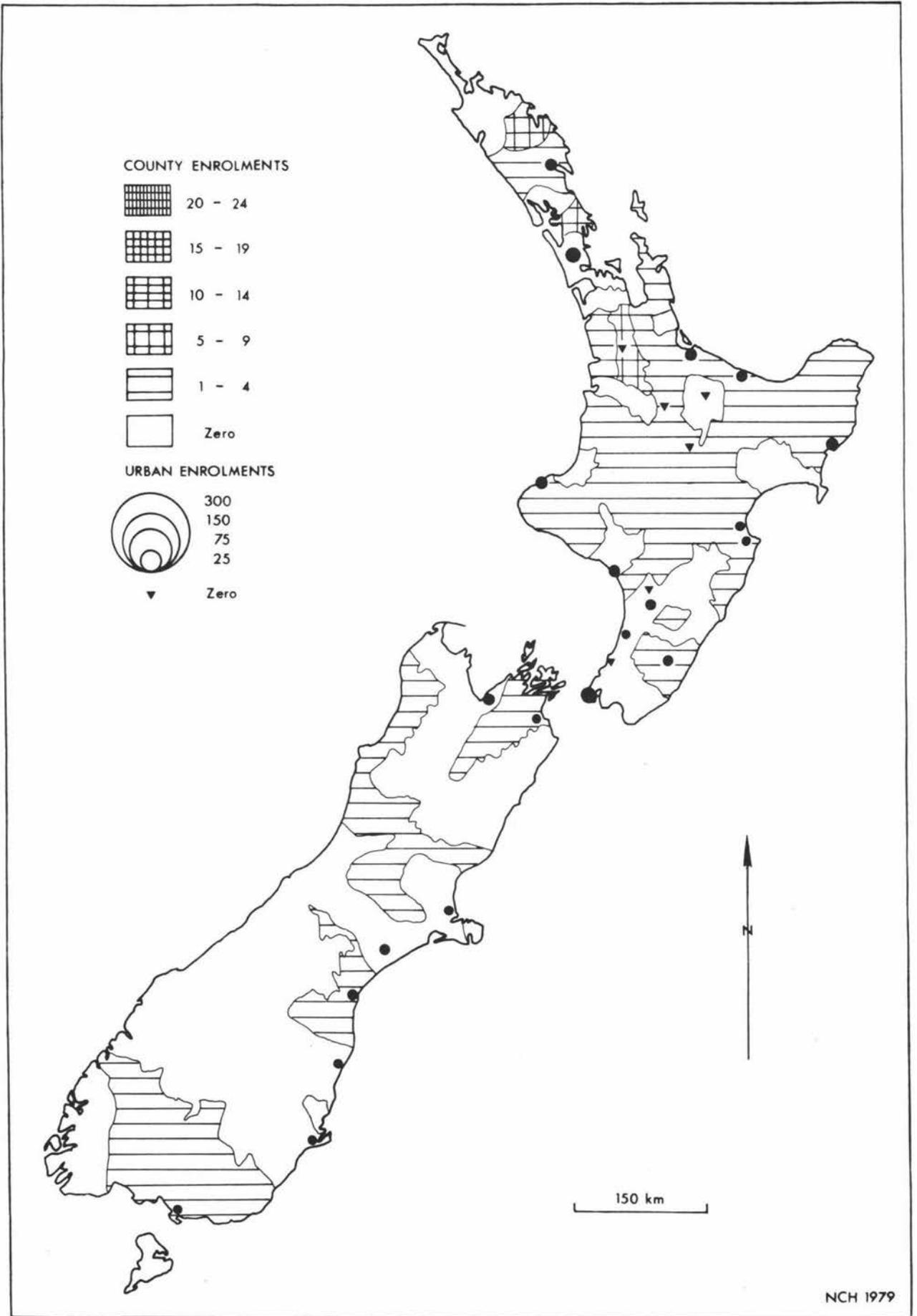


FIG. 5-7a Enrolments in Education BA - 1960

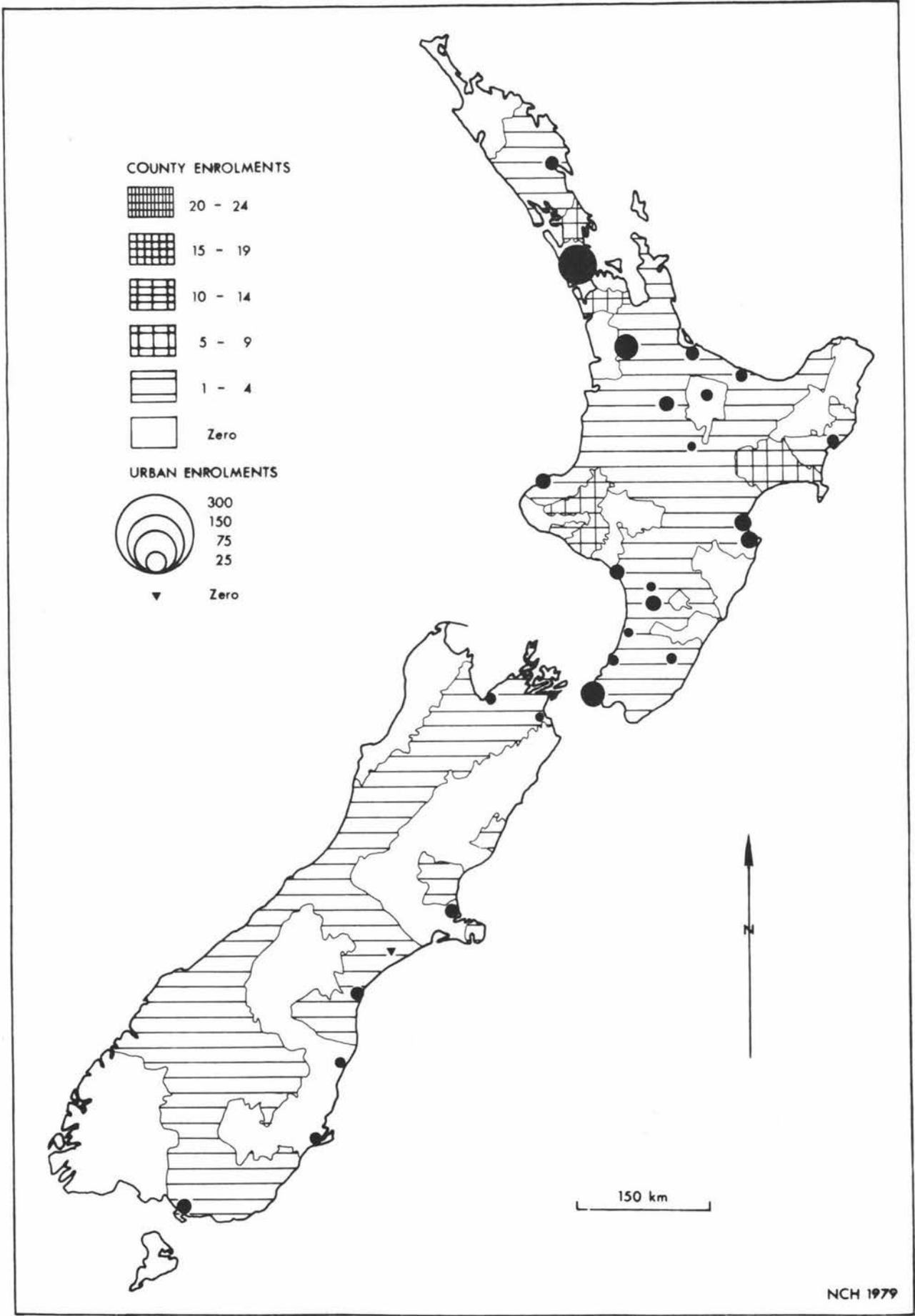


FIG. 5-7b Enrolments in Education BA - 1966

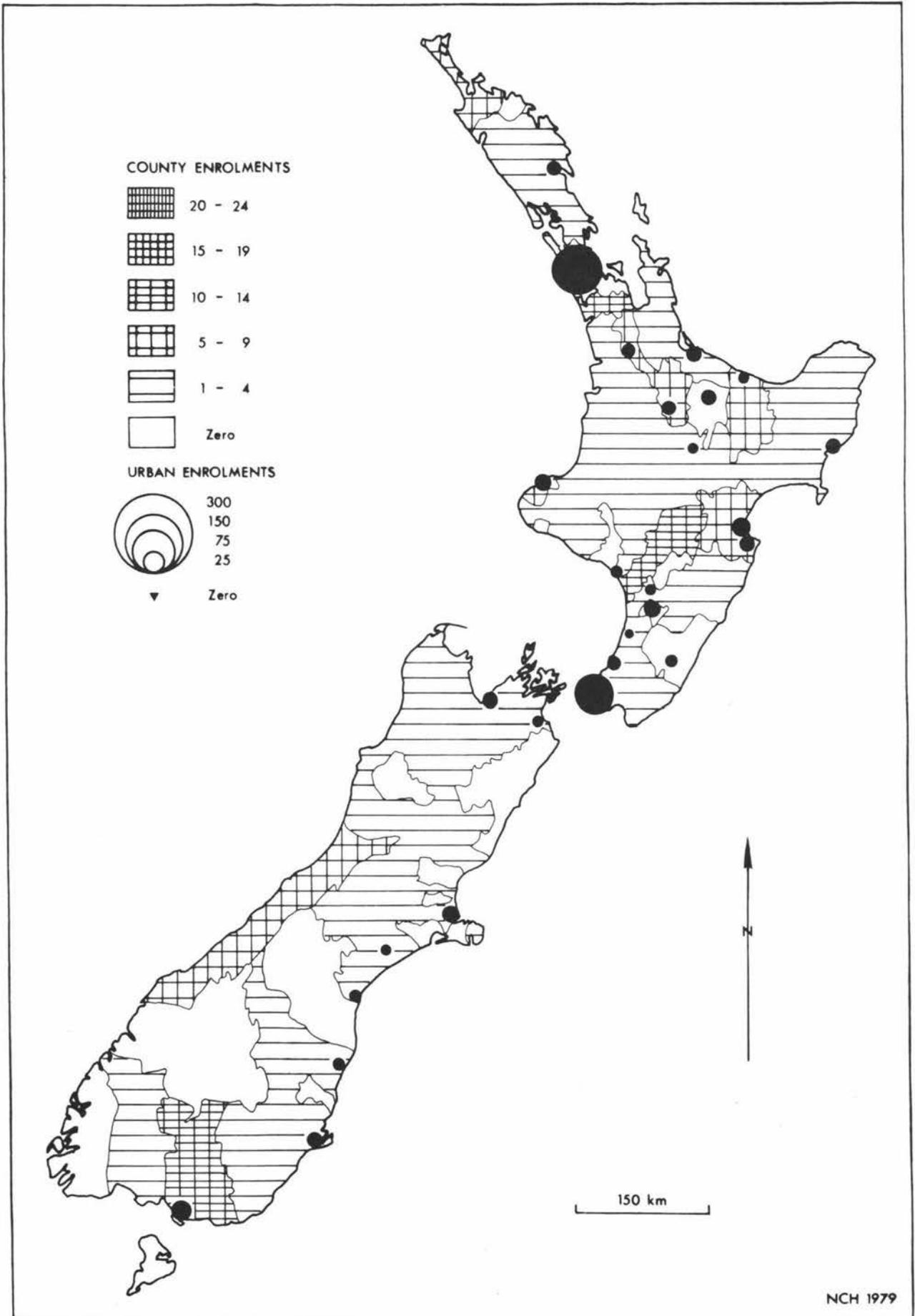


FIG. 5-7c Enrolments in Education BA - 1971

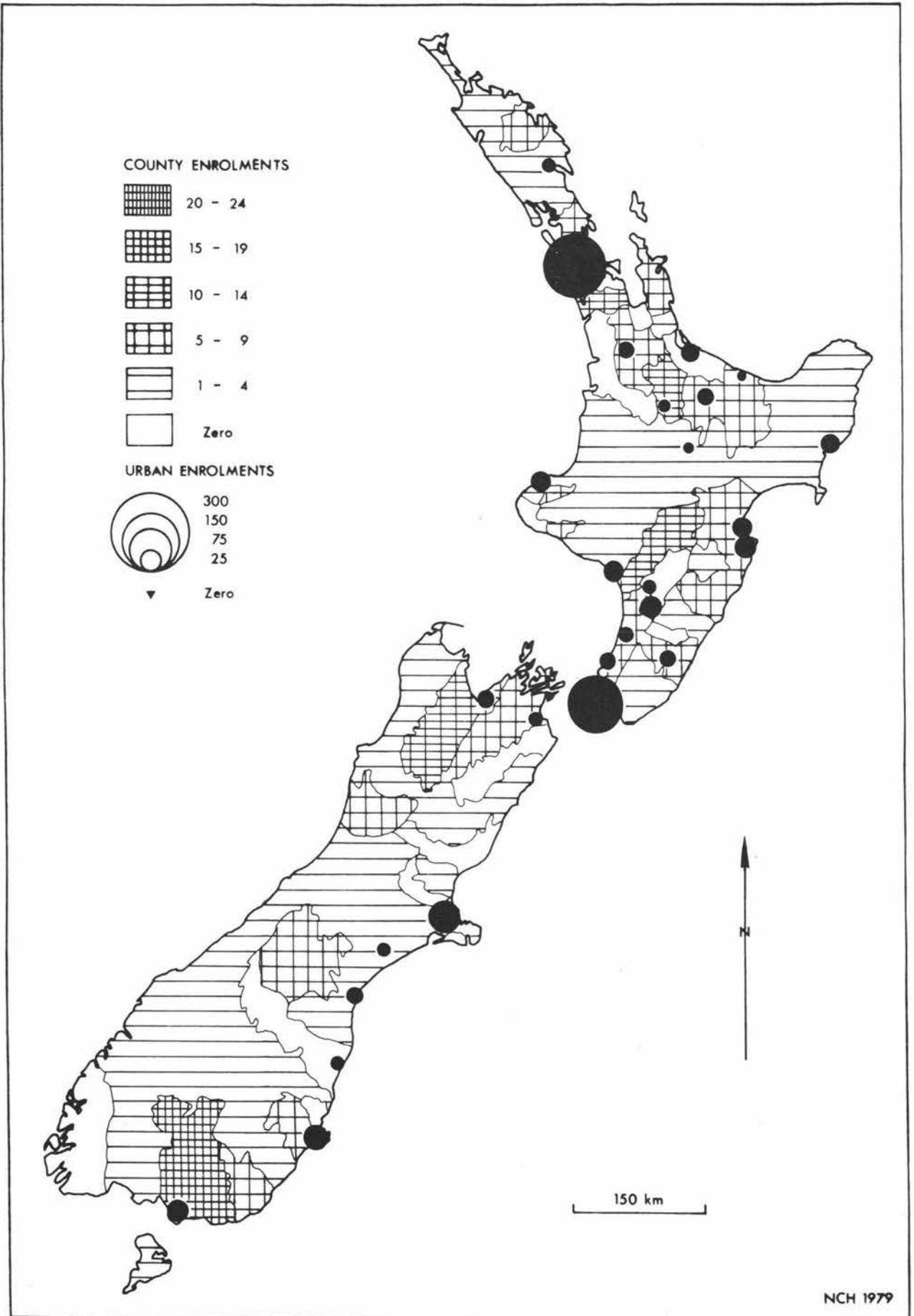


FIG. 5-7d Enrolments in Education BA - 1976

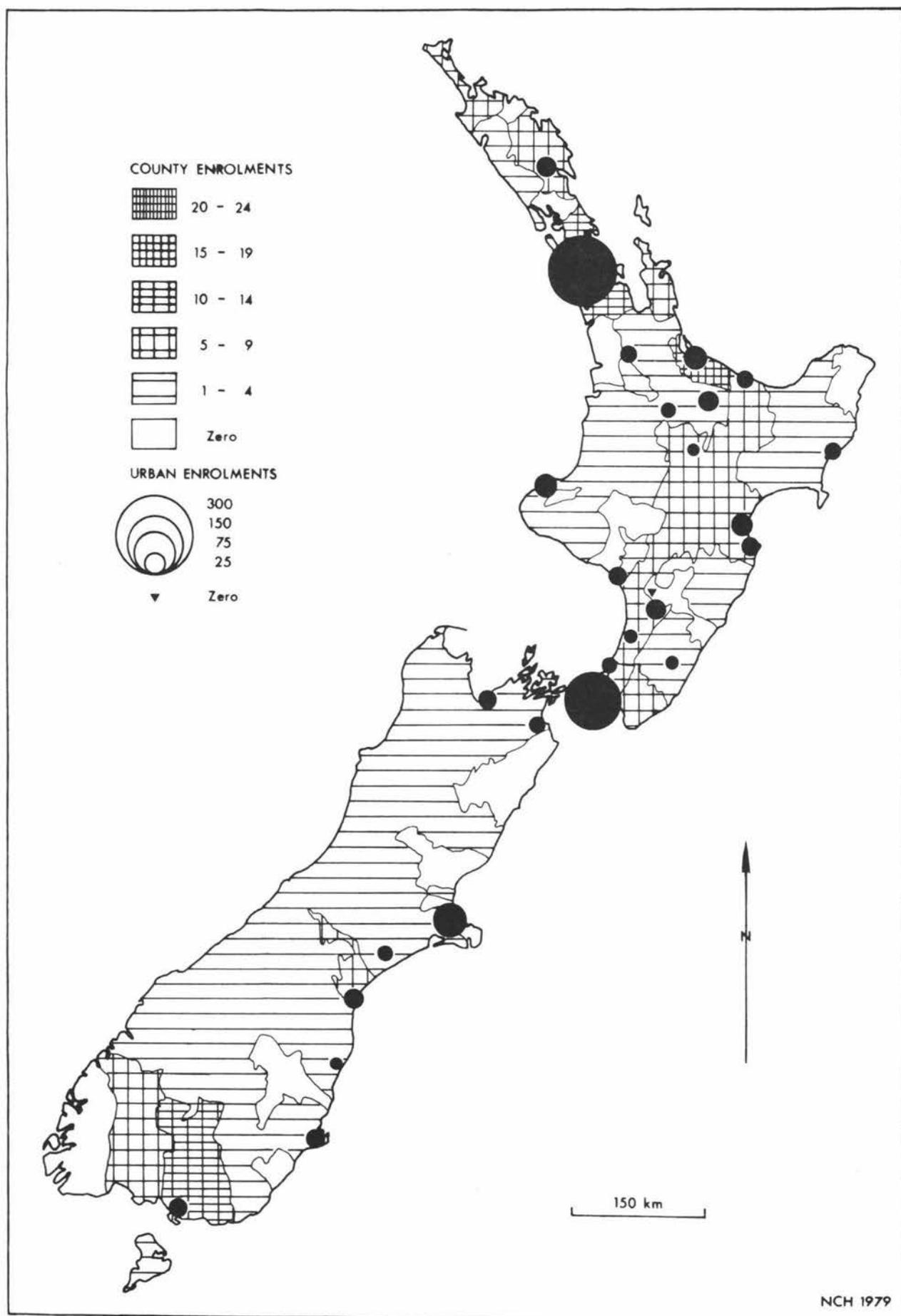


FIG. 5-7e Enrolments in Education BA - 1979

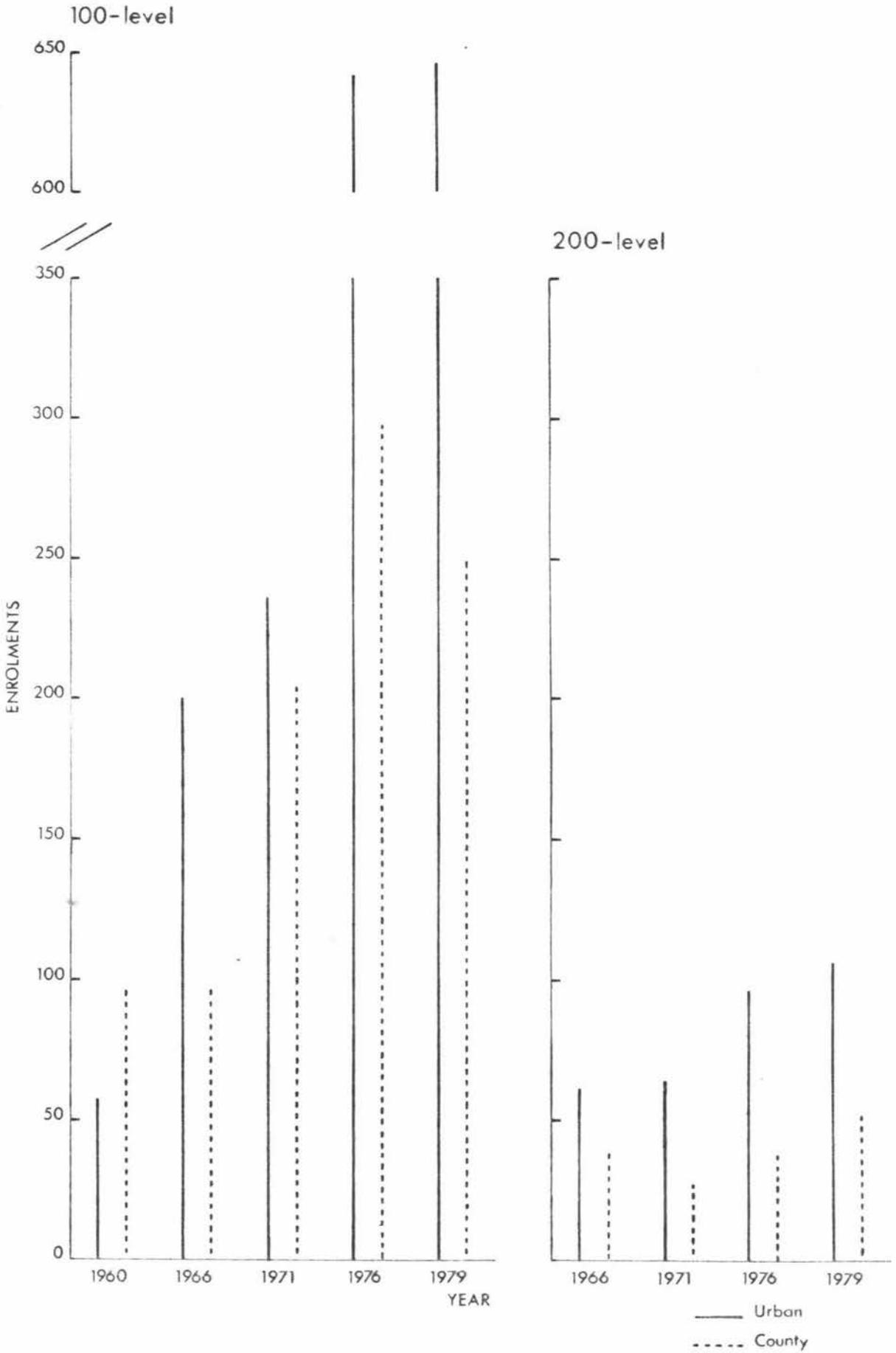


FIG. 5-8 Enrolments in Education (BA)

paper. Numbers for 1979 show a slight drop in enrolments (-1 percent between 1976 and 1979). This may be only a random fluctuation or it may be that the market threshold is now stabilising. Certainly in county areas the numbers at 100-level have dropped although at 200-level there has been a minimal increase. Within urban areas though growth is being maintained (Fig. 5-7e).

Education (B.Ed and Dip.Ed)

The Diploma of Education was introduced in 1965. As this is a post-graduate diploma the majority of the first students were secondary school teachers and came from the urban areas (Fig. 5-9a). With the introduction of professional papers at degree level in 1970 county enrolments became increasingly important (Fig. 5-9b). The reason is that these papers which formed the basis for the degree of Bachelor of Education were designed specifically for primary school teachers. Because they are curriculum based they are well suited to teachers in both county and urban schools. Between 1971 and 1976 enrolments increased by 111 percent (Fig. 5-9c).

Much of the impetus for growth has been created by the N.Z. Department of Education. Through a variety of incentives teachers are being encouraged to improve their qualifications. Teachers' Bursaries which cover the cost of fees are available and each year the Department grants a year's leave of absence on full pay to selected teachers who wish to complete a first degree. In 1976 the Summer School programme was introduced. Teachers nearing completion of their degree enrol for the three 300-level pap-

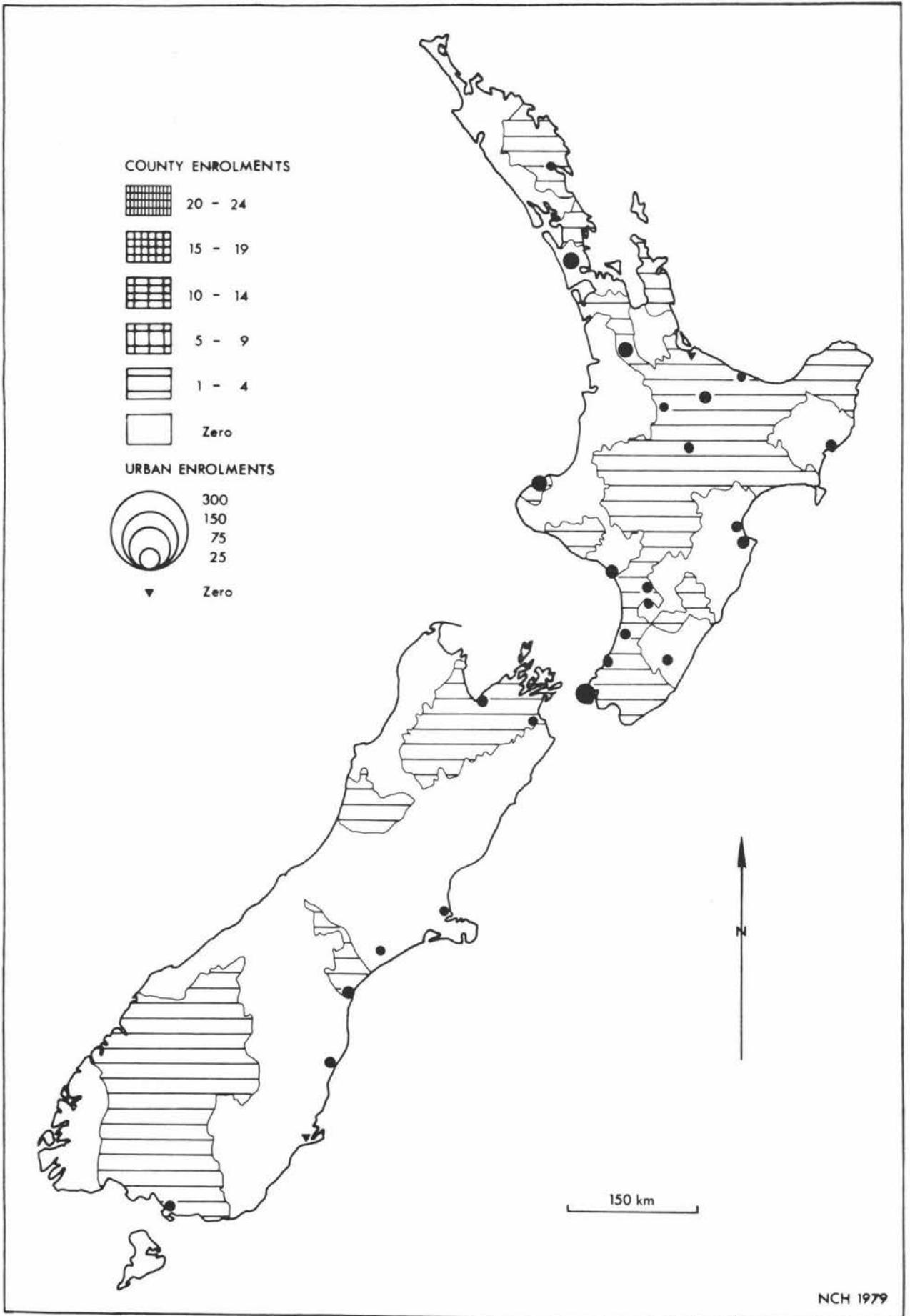


FIG. 5-9a Enrolments in Education Dip.Ed - 1966

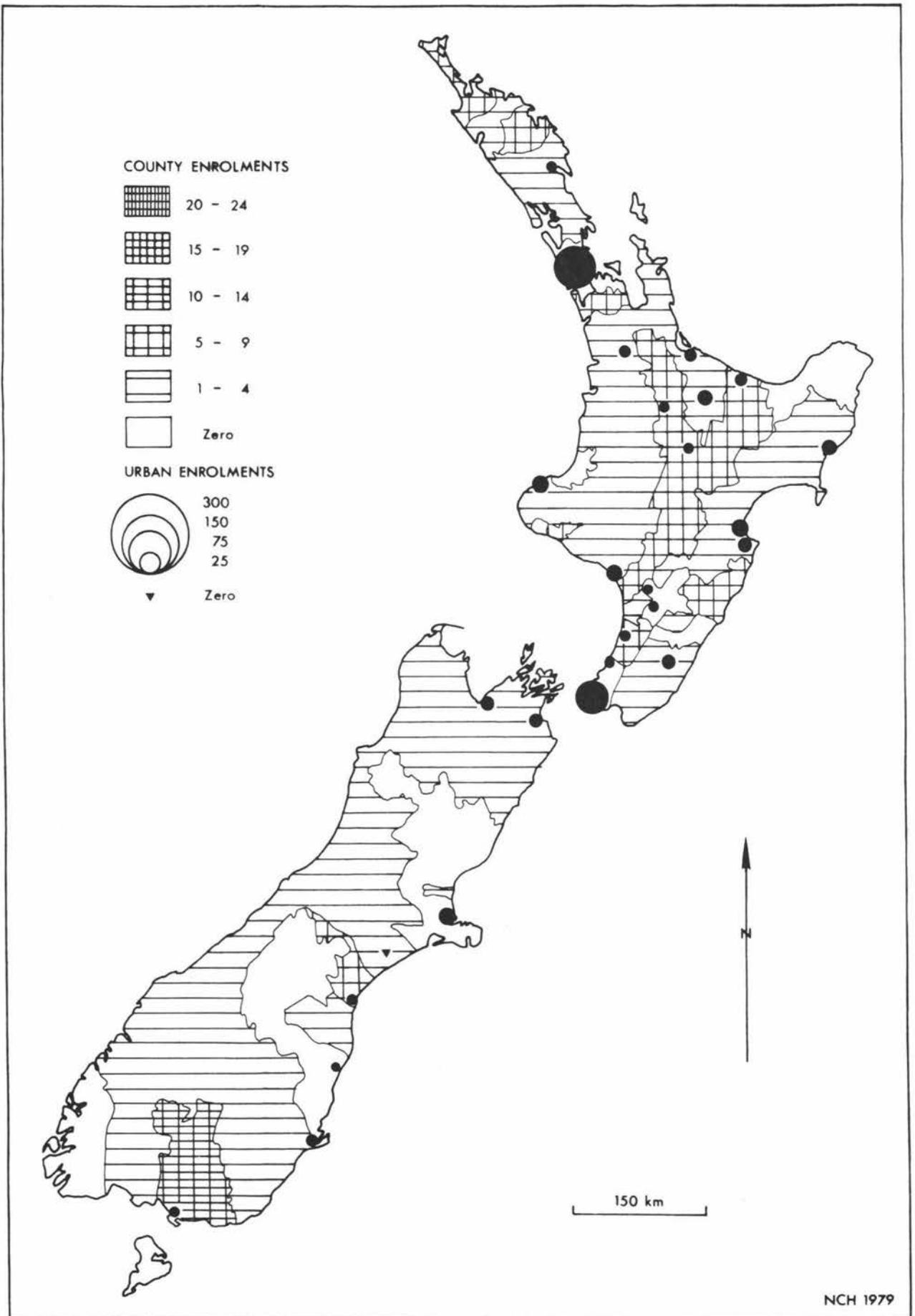


FIG. 5-9b Enrolments in Education BEd & Dip.Ed - 1971

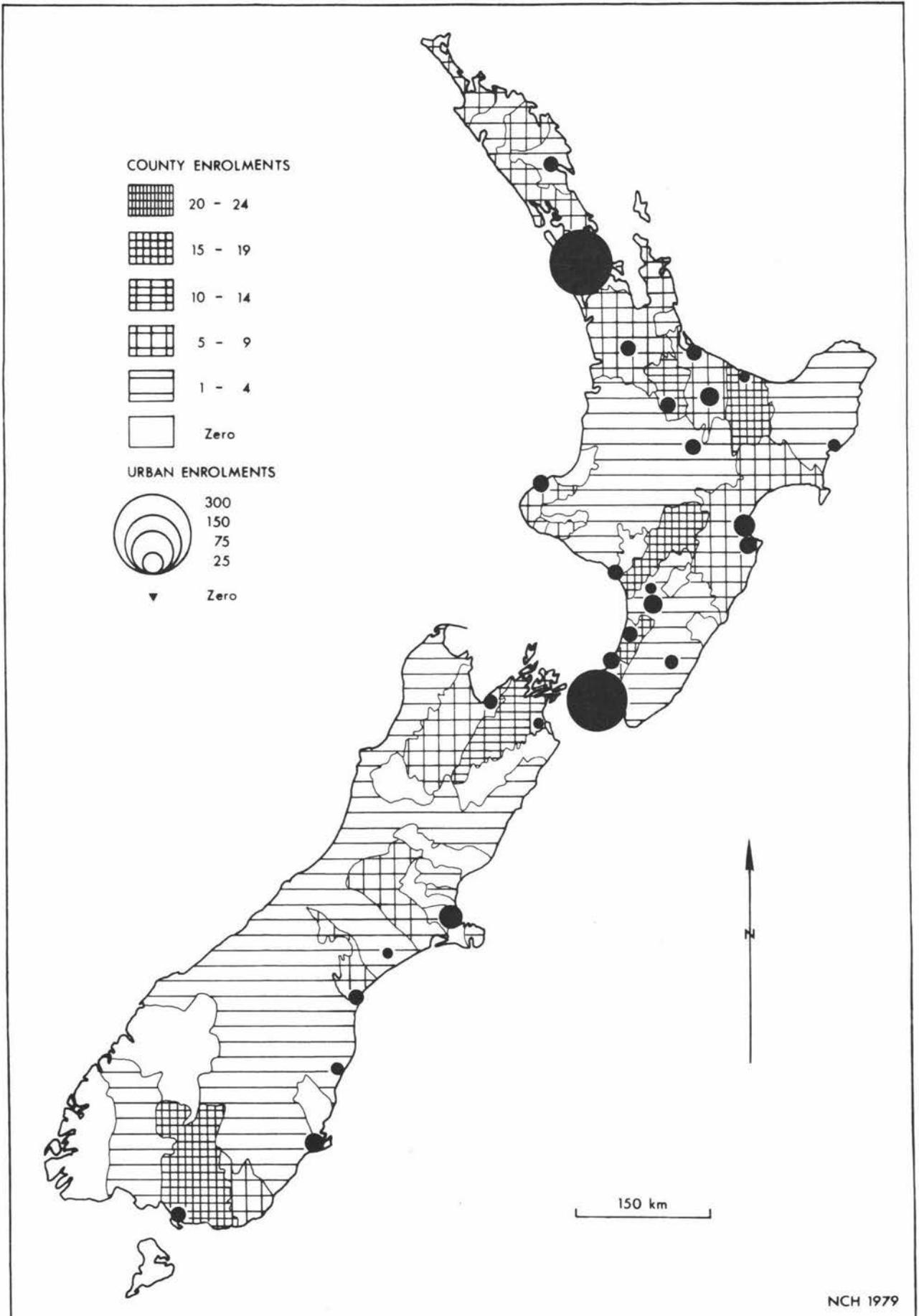


FIG. 5-9c Enrolments in Education BEd & Dip.Ed - 1976

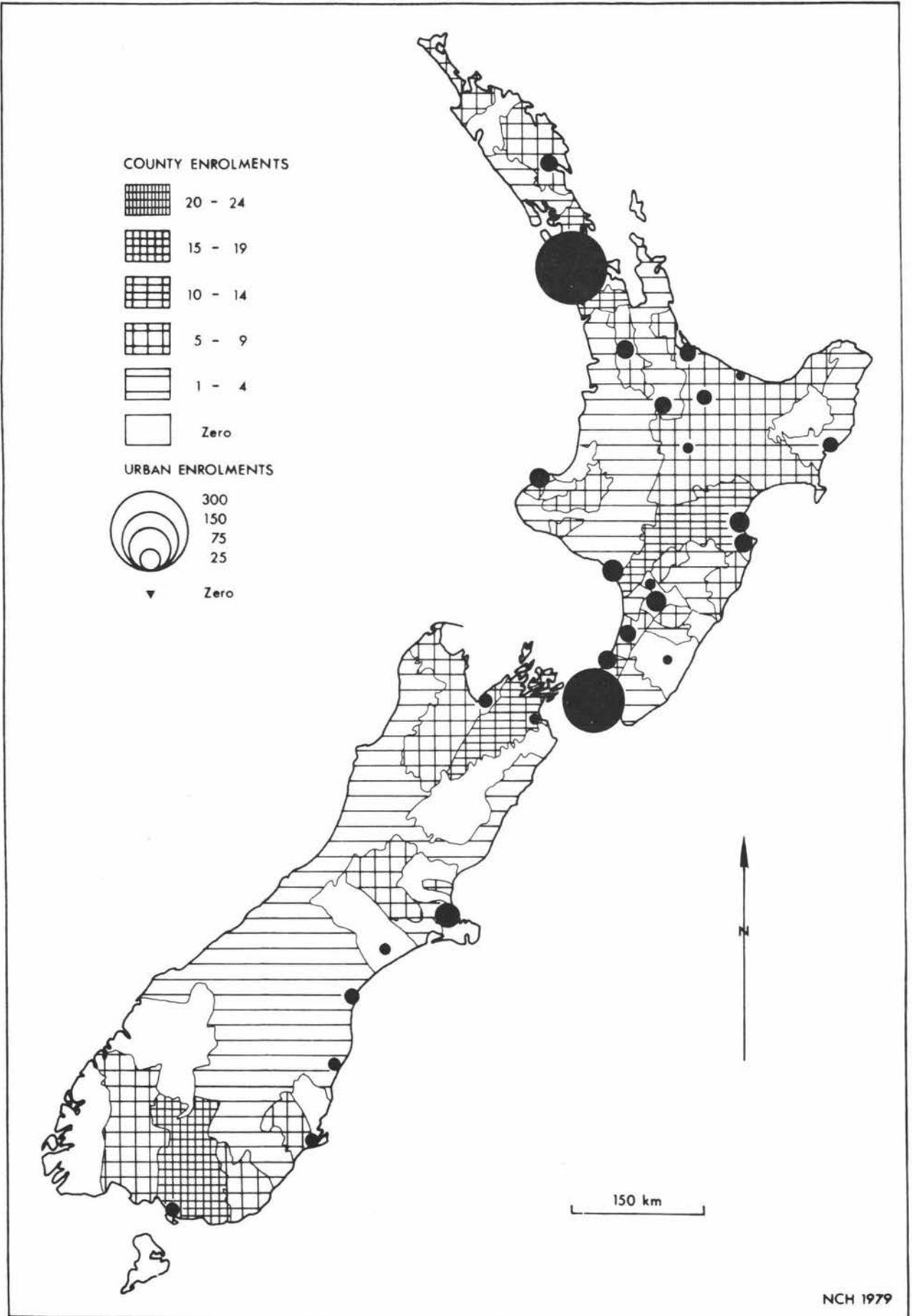


FIG. 5-9d Enrolments in Education BEd & DipEd - 1979

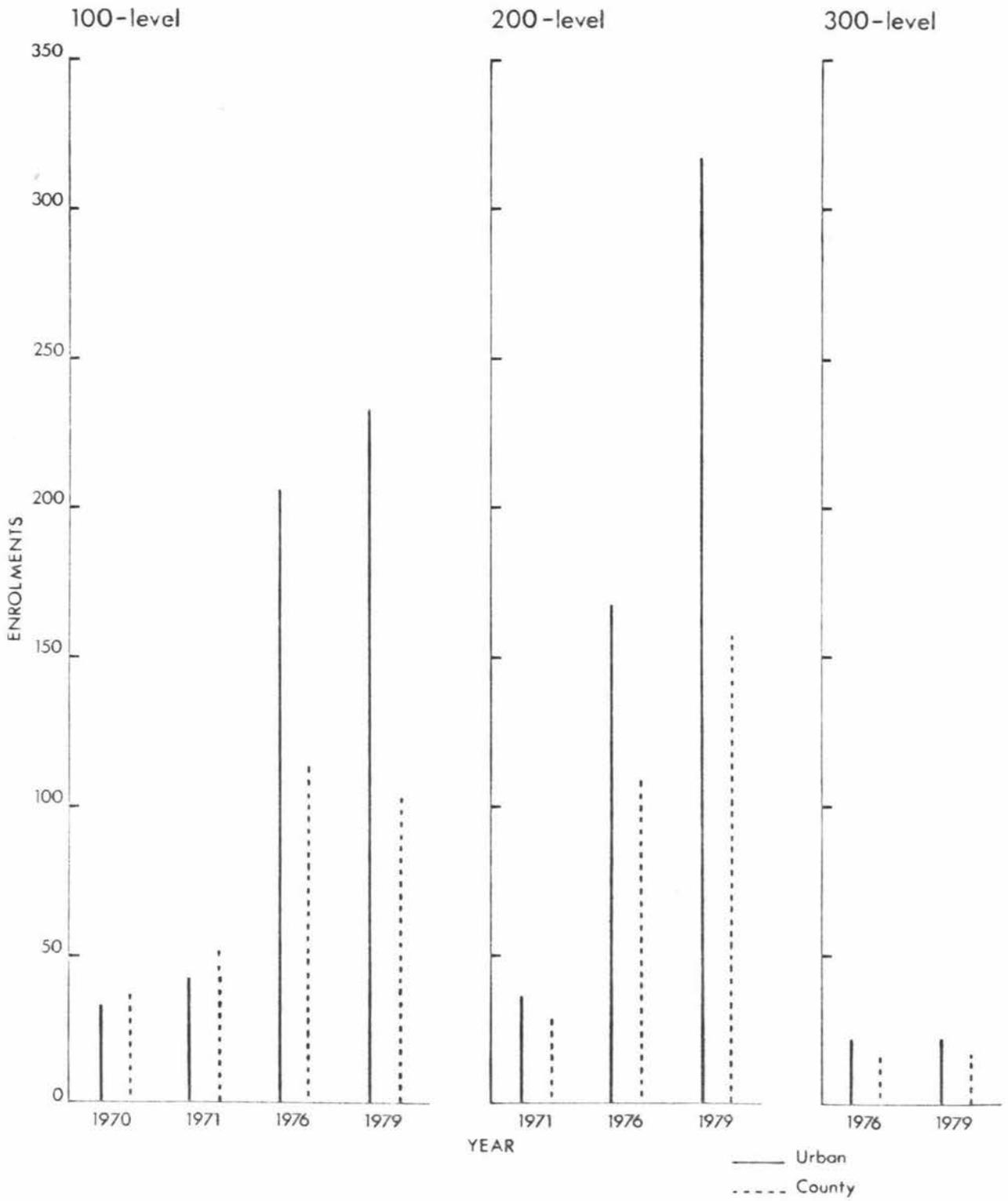


FIG. 5-10 Enrolments in Education (B.Ed)

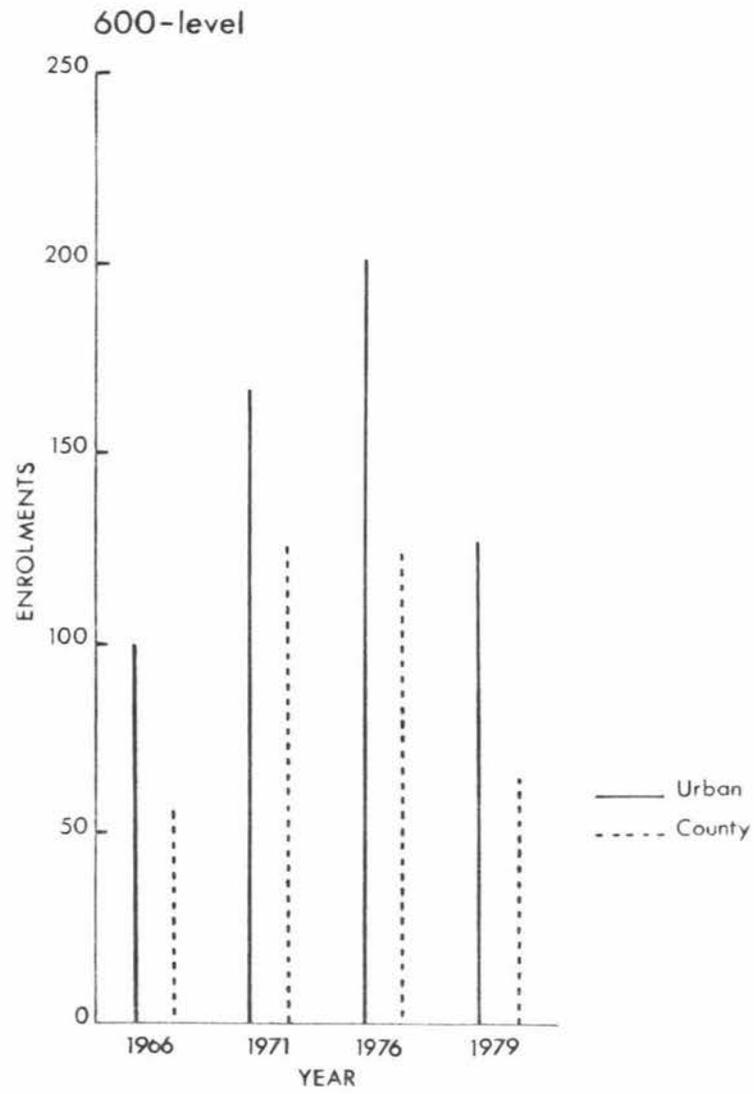


FIG. 5-10cont. (Dip.Ed)

ers and work as extramural students until late October. They are then granted leave of absence to attend a seven week intensive internal course in order to complete the degree requirements. Intake, however, is restricted and an administrative requirement is that all students complete the same 300-level papers. Finally salary scales have been readjusted to take into account academic qualifications.

Although a decline in enrolments is noticed in some areas much of this can be attributed to the aggregation of papers. However, in the last few years there has been an increasing tendency towards the amalgamation of country schools and this has a direct effect on county enrolments (Fig. 5-9d). Growth at 100-level has been sustained while enrolments at 200-level which deals with specific curriculum areas have grown substantially. At 300-level enrolments are restricted and remain constant while at 600-level there has been a decline (Fig. 5-10). How much this is related to the introduction of the Diploma in Educational Administration and, although an internal course, the Diploma in Guidance Counselling cannot be ascertained from the data collated for this thesis. The impact made by students enrolled through Teachers' College (Auckland and North Shore) is reflected in Auckland enrolments, and the more recent Outpost Scheme¹ requirements are being reflected in enrolments in other main centres.

Modern Languages

Of all the subjects studied Modern Languages has been the most urban-oriented (Fig. 5-11). Initially only French

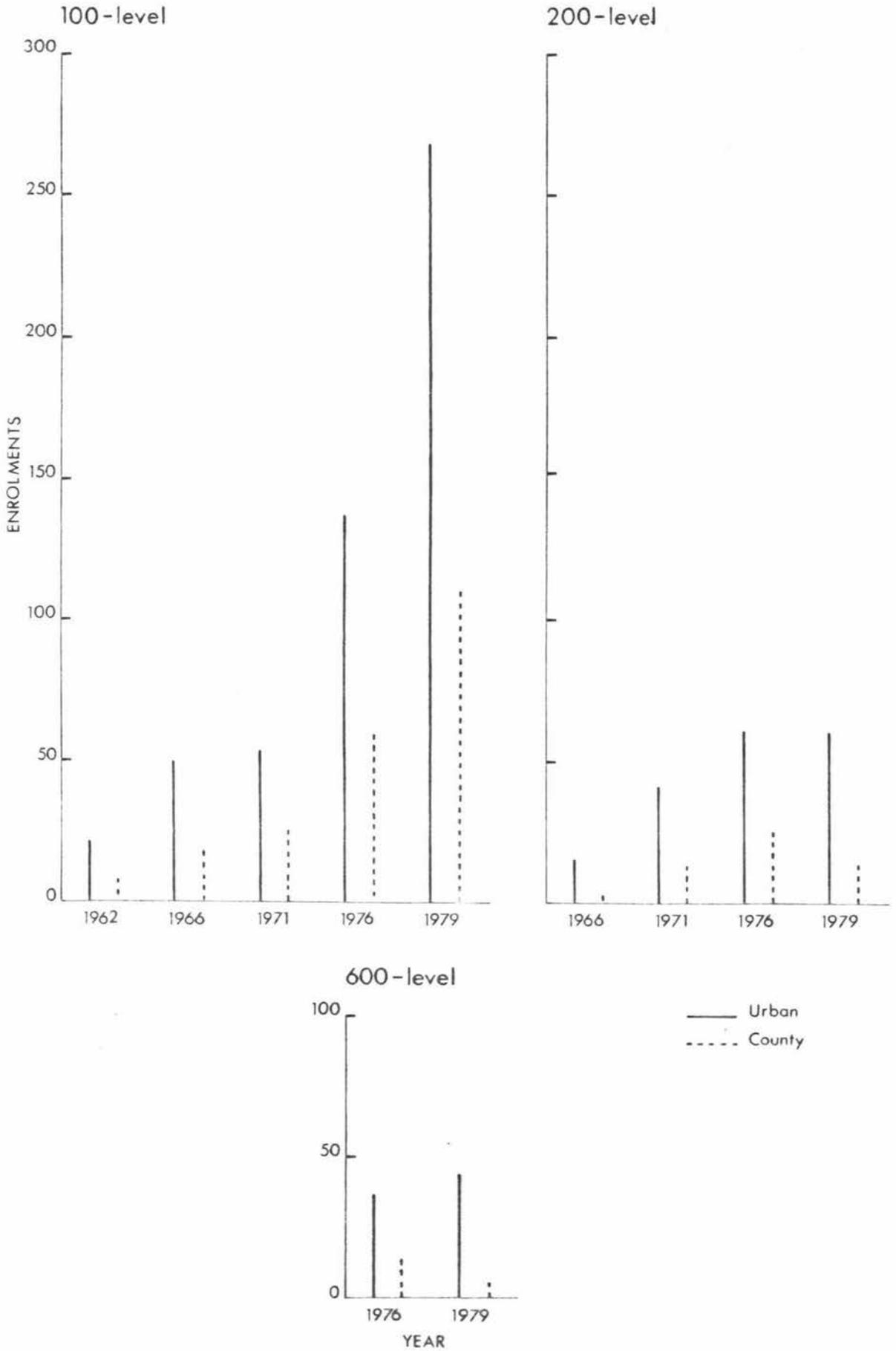


FIG. 5-11 Enrolments in Modern Languages

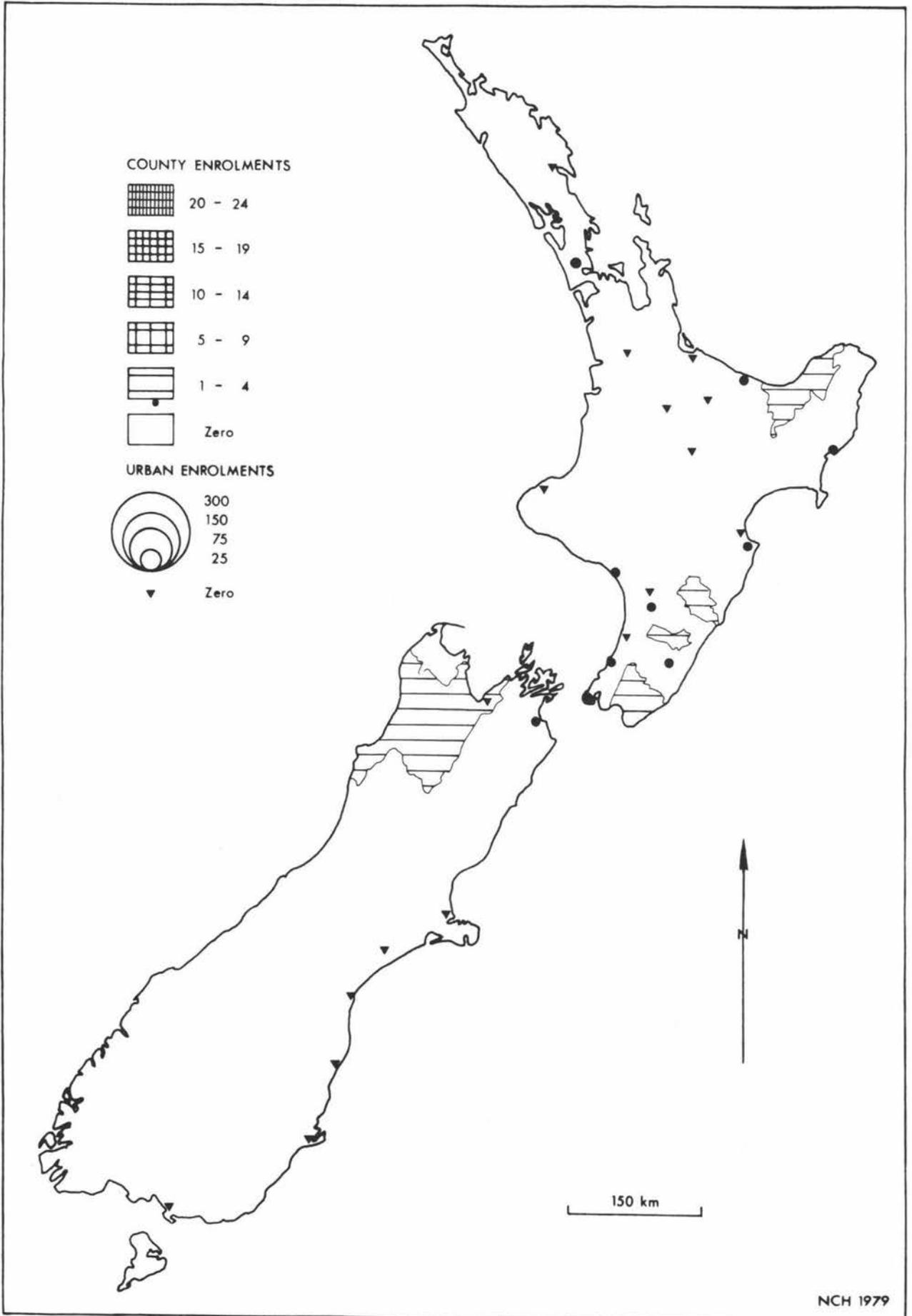


FIG. 5-12a Enrolments in Modern Languages - 1962

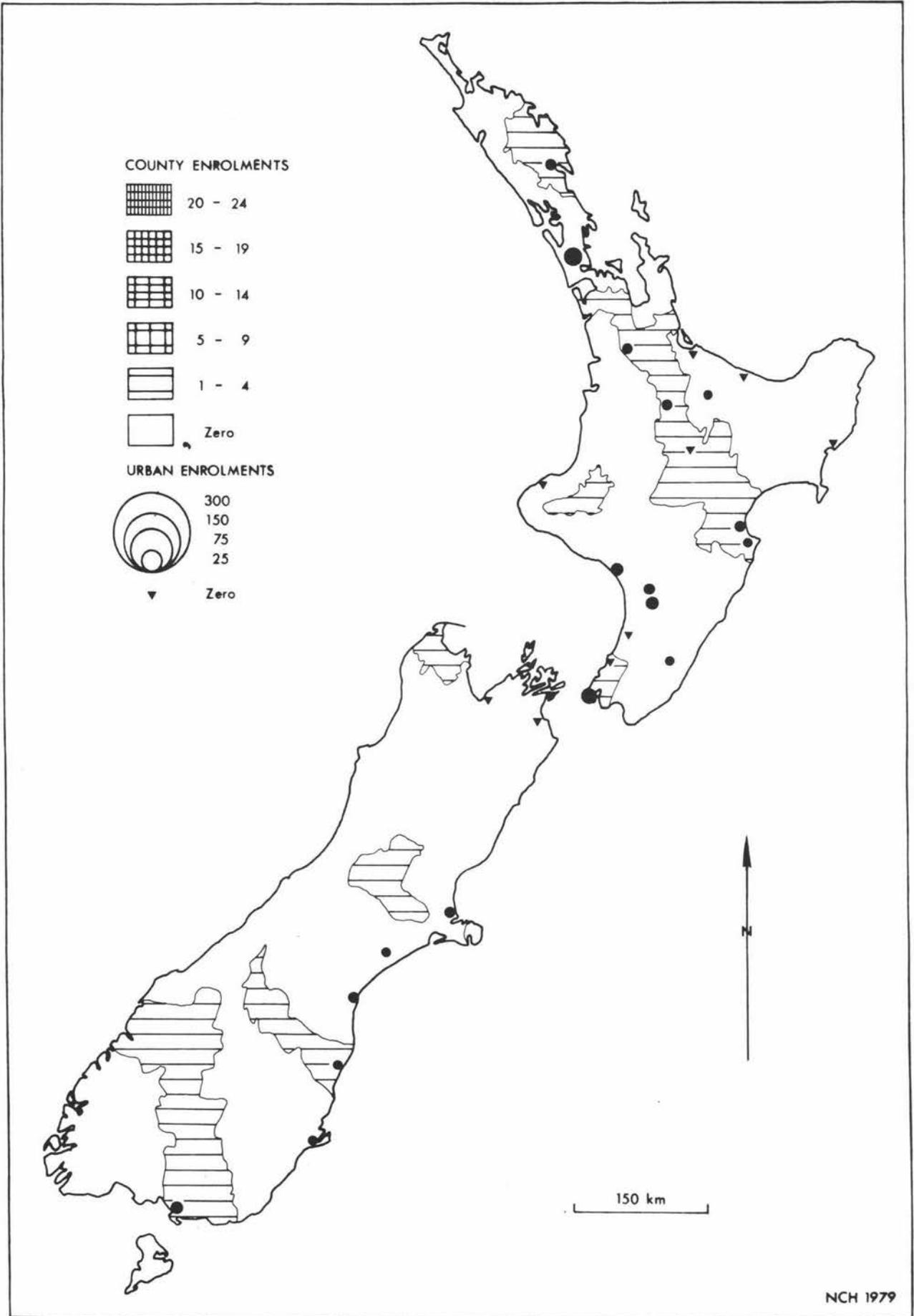


FIG. 5-12b Enrolments in Modern Languages - 1966

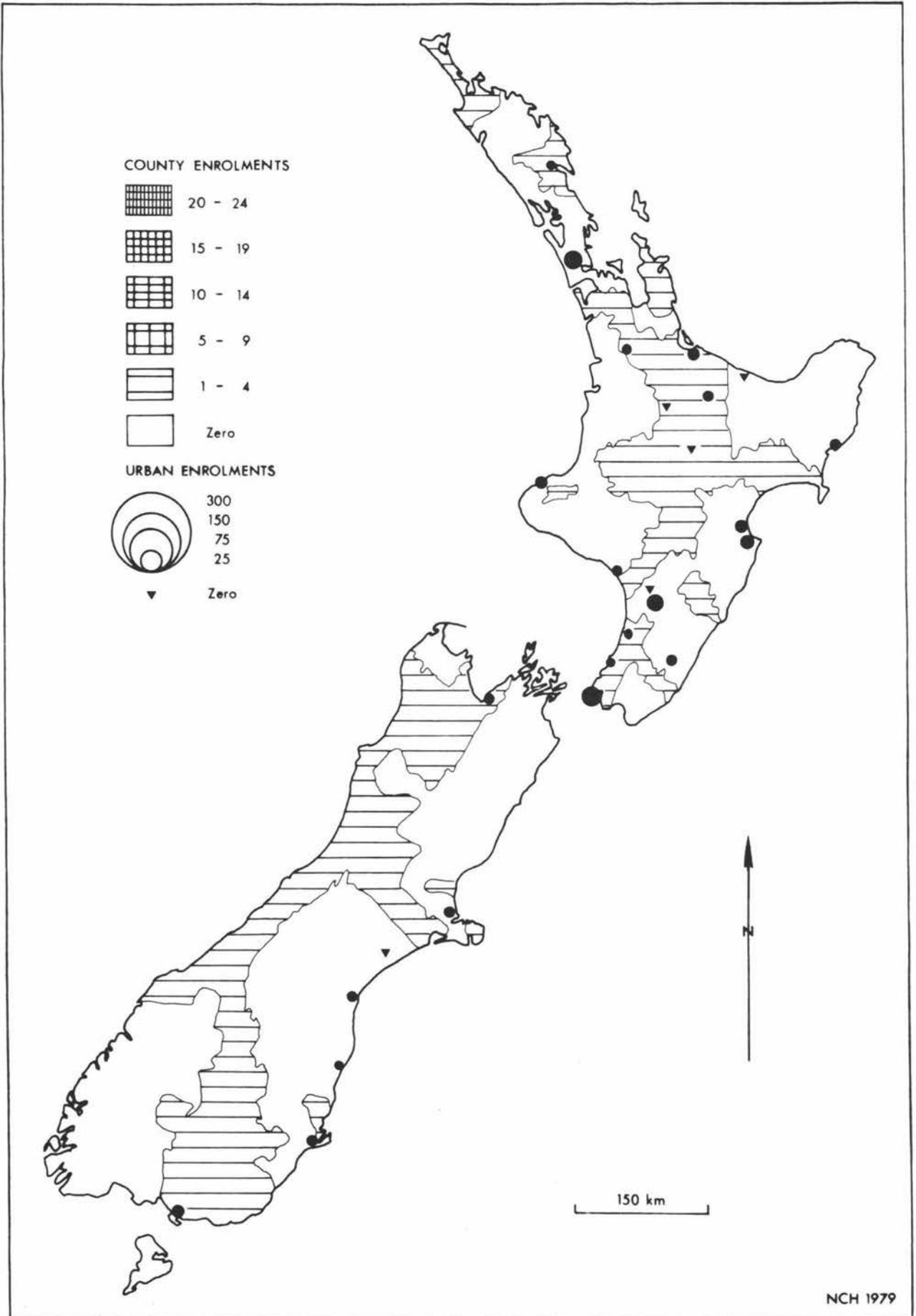


FIG. 5-12c Enrolments in Modern Languages - 1971

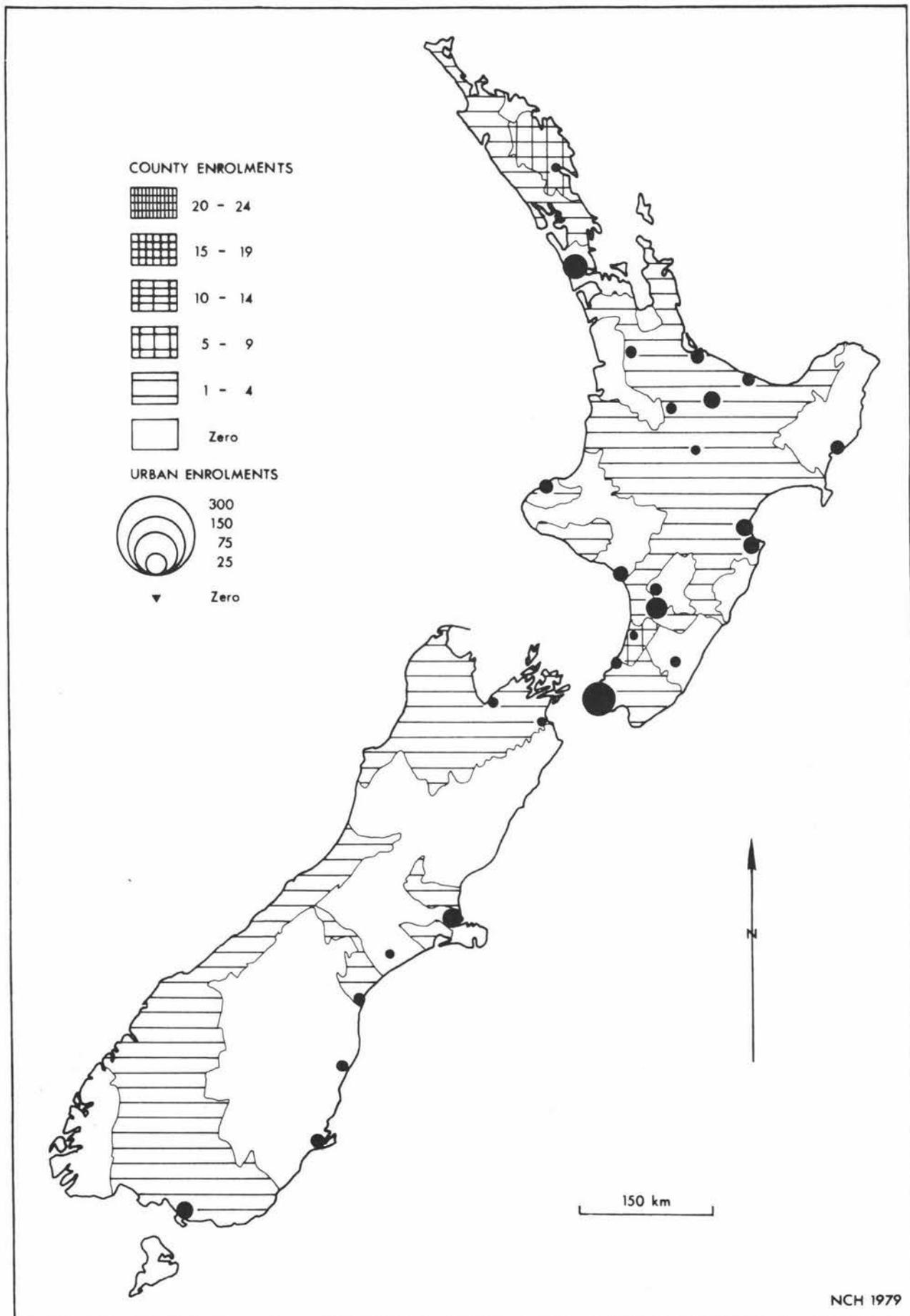


FIG. 5-12d Enrolments in Modern Languages - 1976

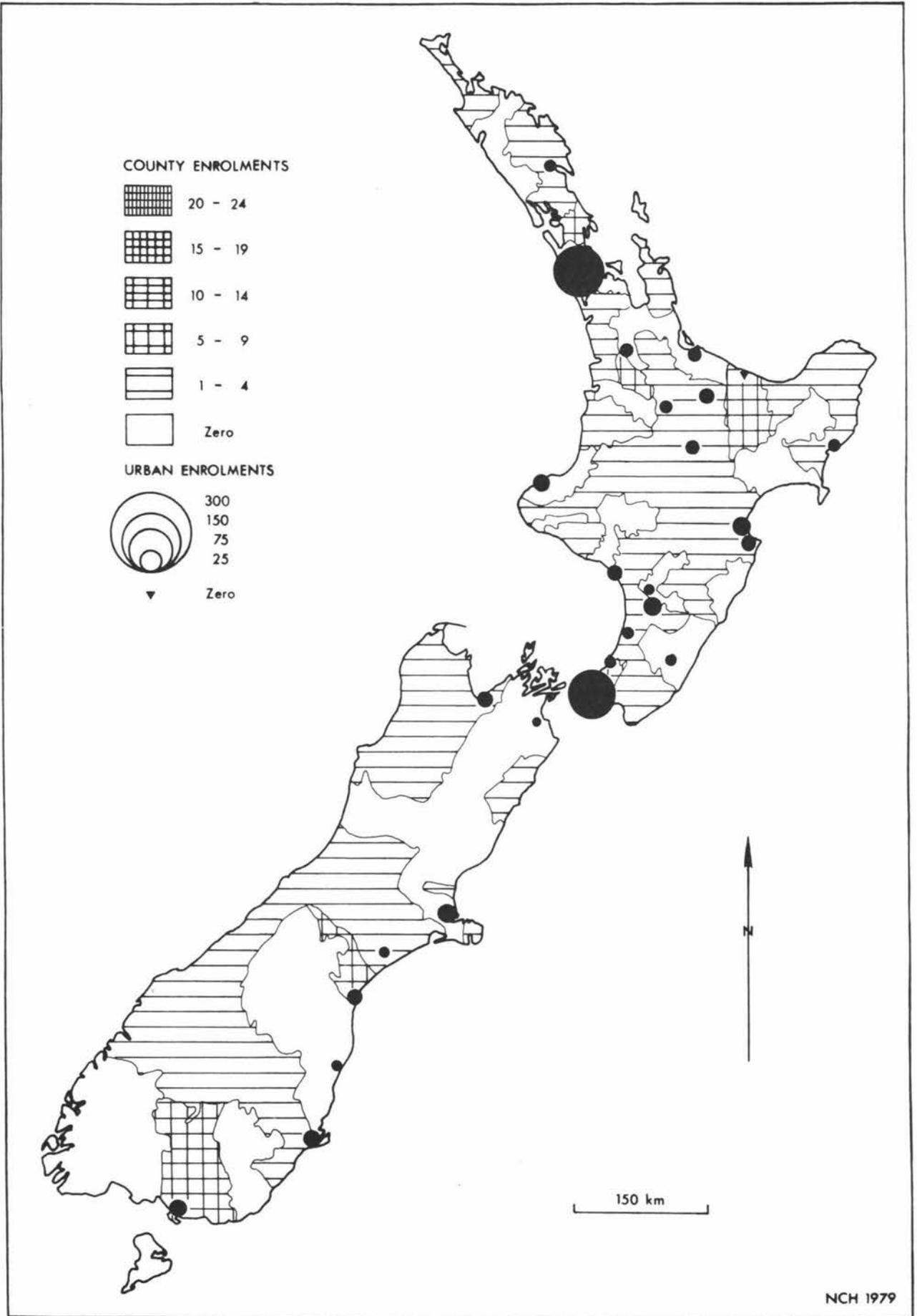


FIG. 5-12e Enrolments in Modern Languages - 1979

Reading Knowledge was offered and in 1962 enrolments were few and widely scattered (Fig. 5-12a). By 1966 the range of subjects offered included French 1 and 2 and French and German Studies and enrolments had quadrupled. The areal expansion which took place in 1966 was probably more relevant to patterns of future growth than the initial enrolments of 1962 (Fig. 5-12b). During 1967-1970 German and Japanese at Stage 1 level were introduced and in 1971 both papers were offered at Stage 2. During this period growth in all regions was sustained (Fig. 5-12c). The growth rates of the individual subjects within Modern Languages cannot be assessed from the data set, but they do play an important role in determining the overall pattern of growth. Japanese, for example, was at first very competitive, but the small market was quickly satisfied and it has now reached a diminishing market.

In 1974 the Diploma in Second Language Teaching was introduced. Since admission to this course is conditional on a prior pass in at least two language papers (one at 200-level) the impact of this requirement is undoubtedly one of the reasons for the large increase in enrolments at 100-level. County numbers remain relatively small and there are areas in the South Island that have never been penetrated. Interest in second language teaching should grow as the need for a greater understanding in linguistics by those who teach and work with immigrants is becoming more apparent.

Geography

Geography was not introduced as an extramural subject

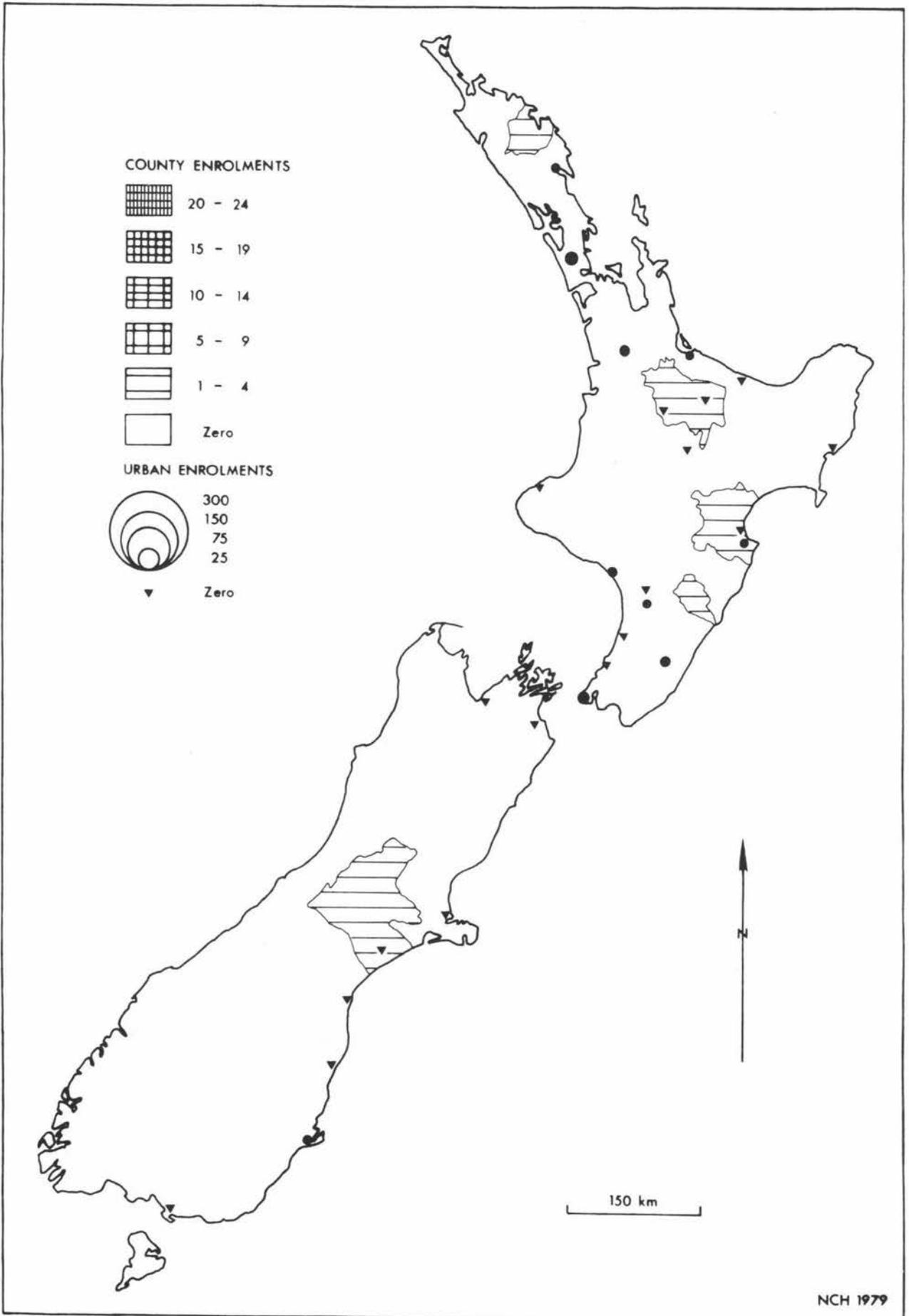


FIG. 5-13a Enrolments in Geography - 1969

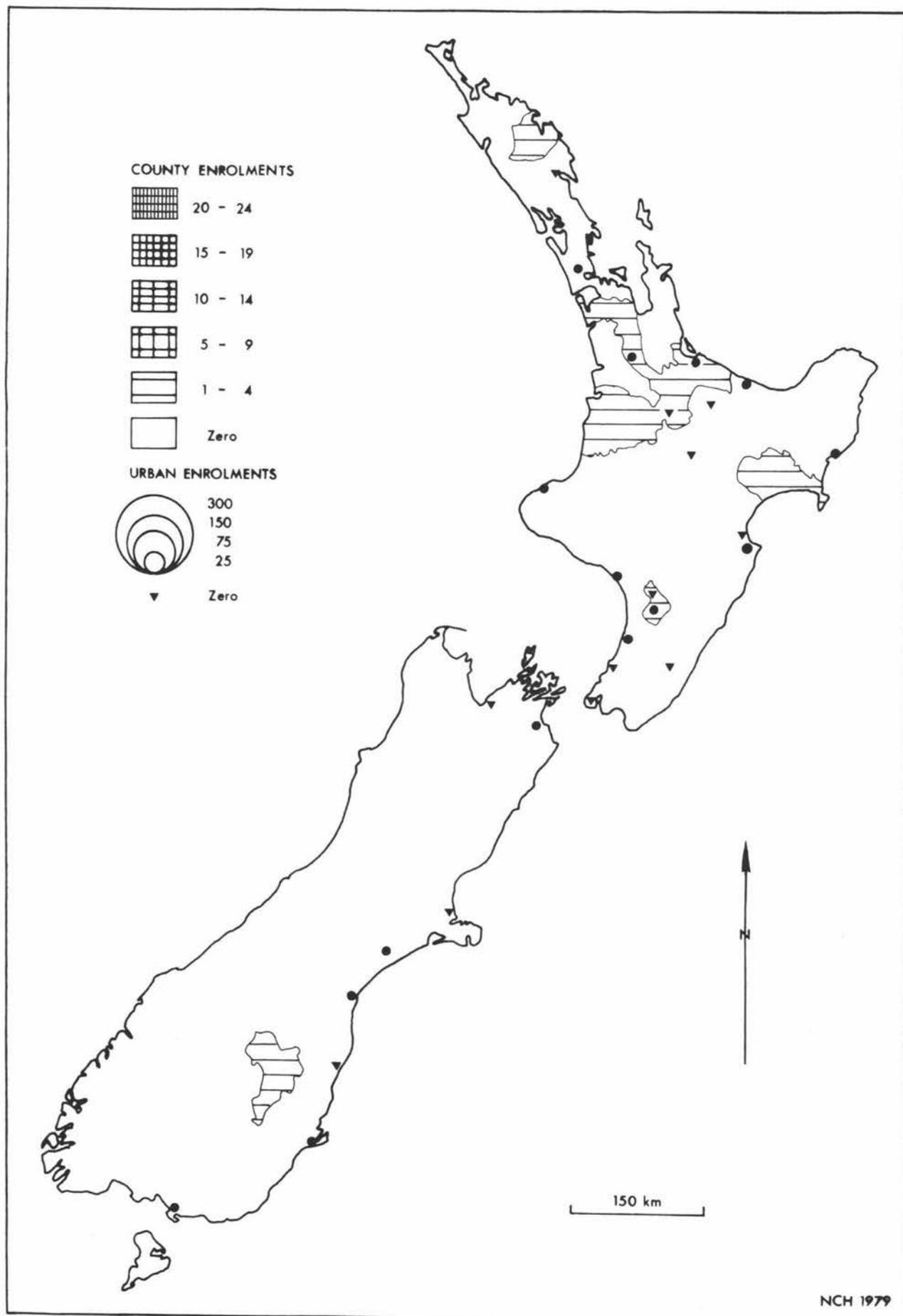


FIG. 5-13b Enrolments in Geography - 1971

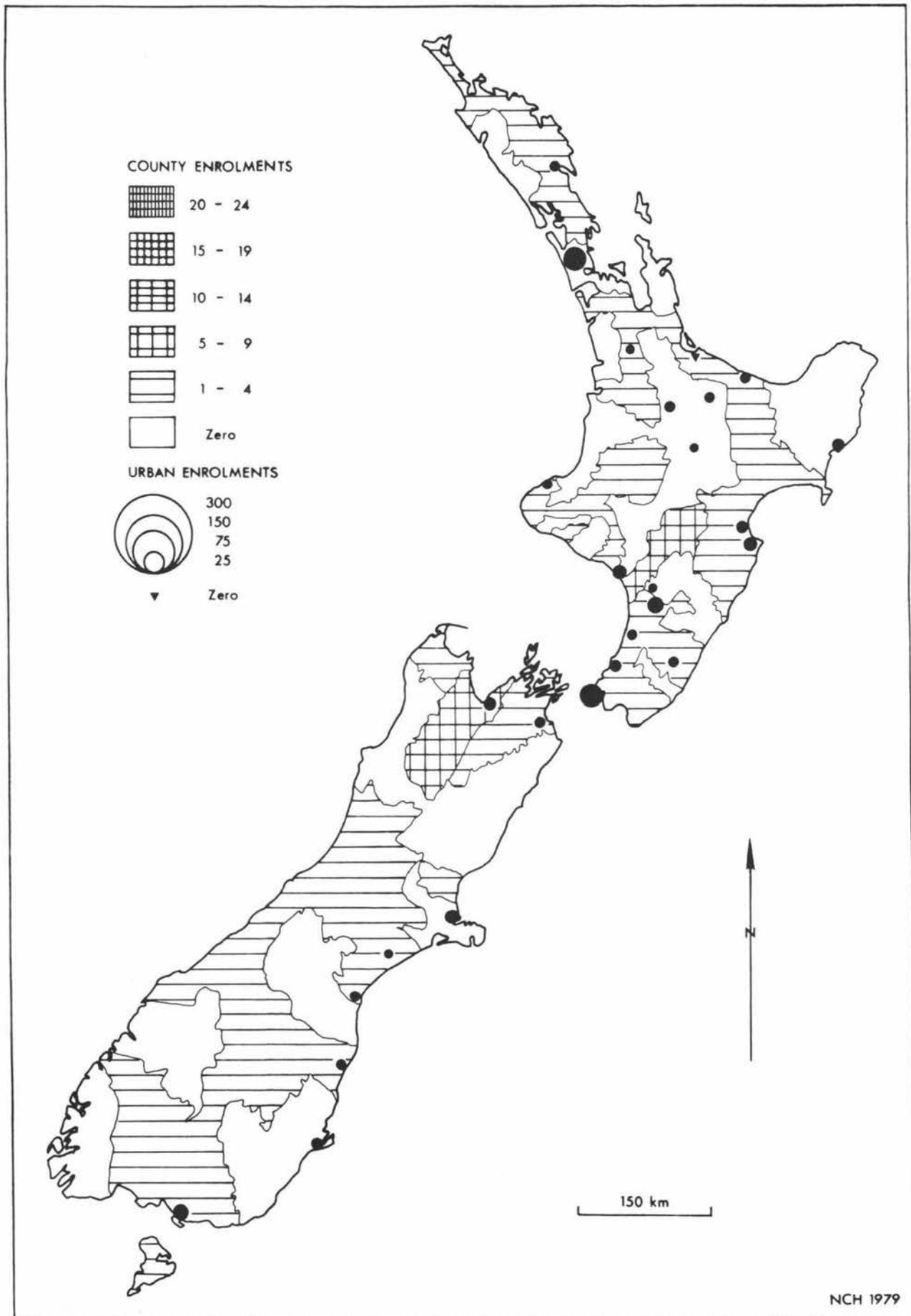


FIG. 5-13c Enrolments in Geography - 1976

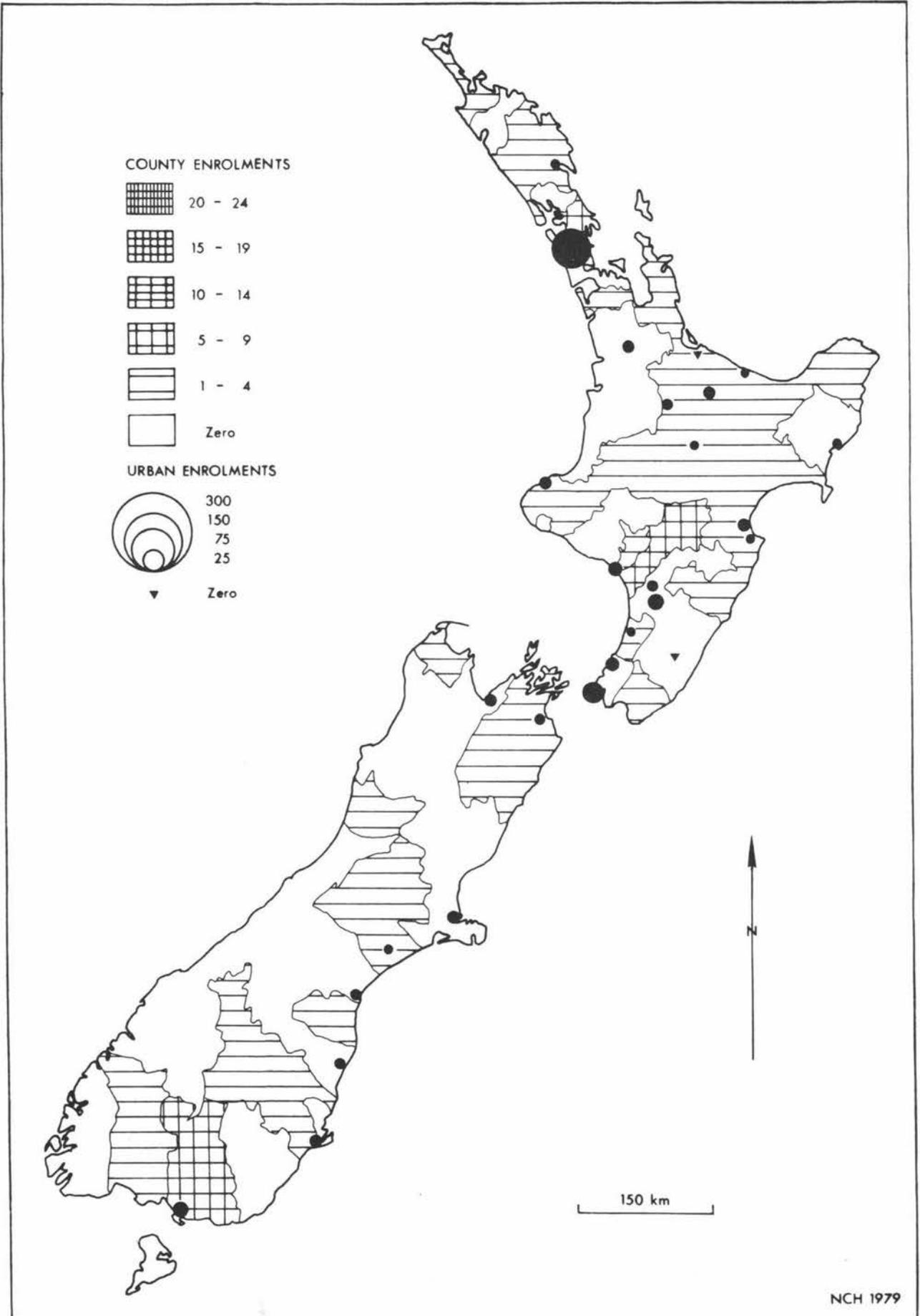


FIG. 5-13d Enrolments in Geography - 1979

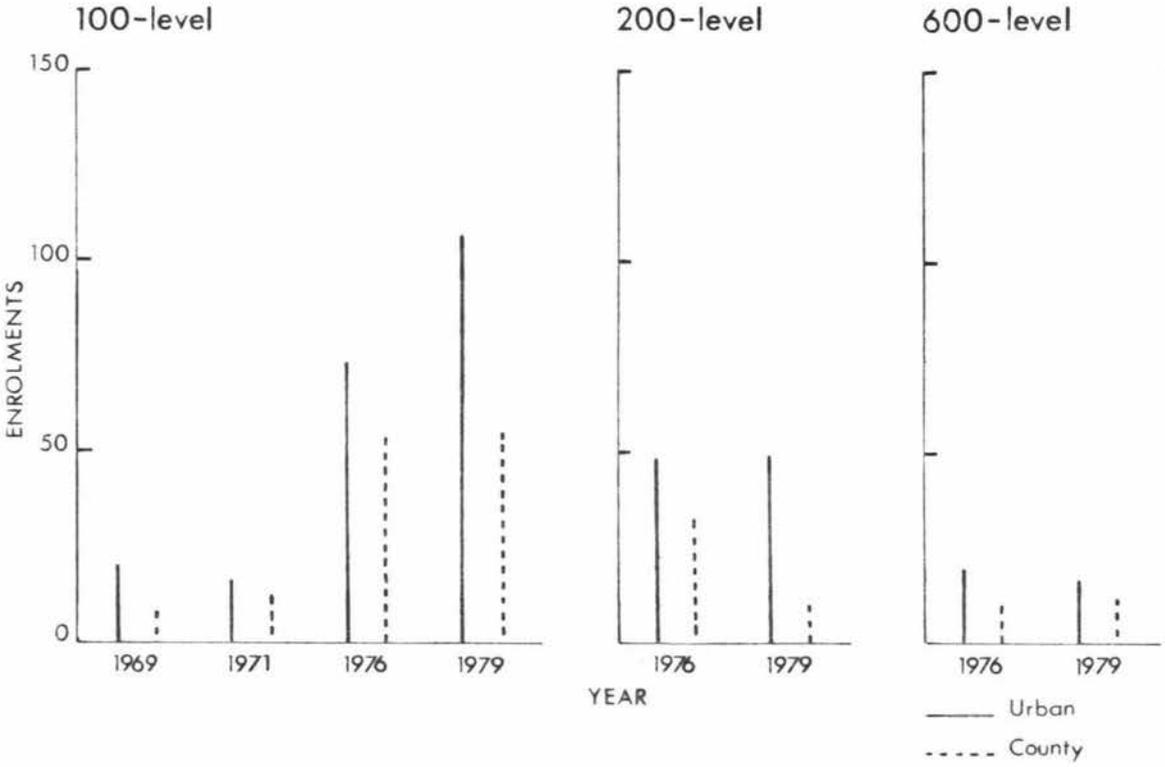


FIG. 5-14 Enrolments in Geography

until 1969. At first numbers were rigidly restricted. The requirement of a compulsory field course during January also acted as a constraint. Most enrolments in the first year were from the North Island (Fig. 5-13a). In 1971 enrolment requirements remained the same as for 1969. This perhaps records one of the most interesting diffusion patterns studied in this thesis for, theoretically, all 1971 enrolments could be assumed to be new enrolments. A movement into new counties and urban areas began to take place but often the original counties and urban areas did not support new students (Fig. 5-13b).

Between 1971 and 1976 much restructuring of the course took place and a larger intake was made possible. Figure 5-13c clearly demonstrates the effect of the introduction of 100-, 200-, and 600-level papers. Another point of interest in this subject has been the relatively even distribution of county and urban enrolments (Fig. 5-14). The change in county and urban enrolments shown for 1979 is, in effect, a reflection of the growth of Auckland enrolments (Fig. 5-13d). Both human and physical geography at the 100-level and Area Studies at 200-level are often taken by students as 'fill-in' papers and because of their content are used as background papers for teaching at the upper primary and lower secondary school levels.

Business Studies

Initial enrolments in Financial Management were very small and as with Modern Languages and Geography they were mainly in North Island urban areas (Fig. 5-15a). By 1976 enrolments in 100-level and 200-level papers had increased

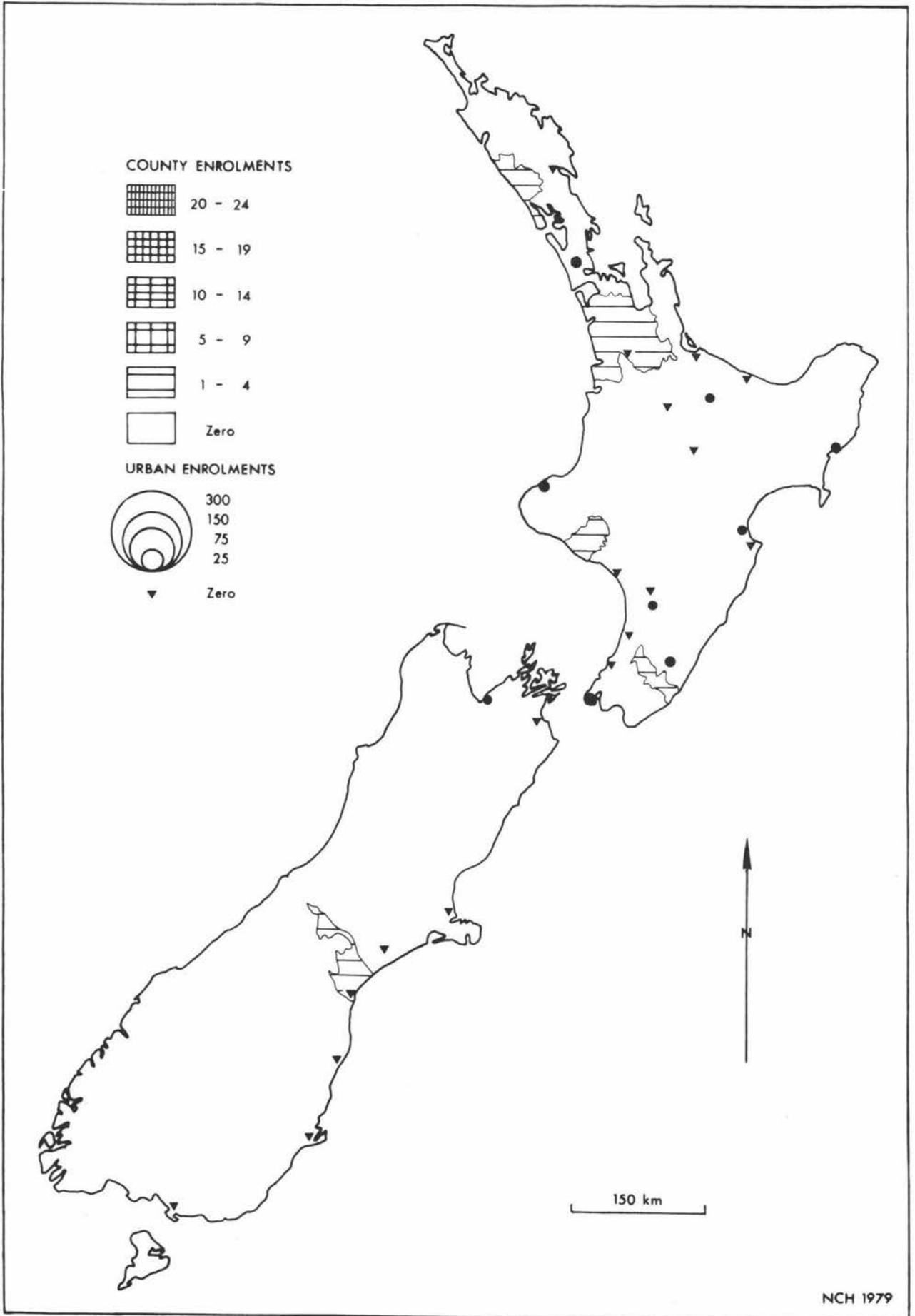


FIG. 5-15a Enrolments in Business Studies - 1972

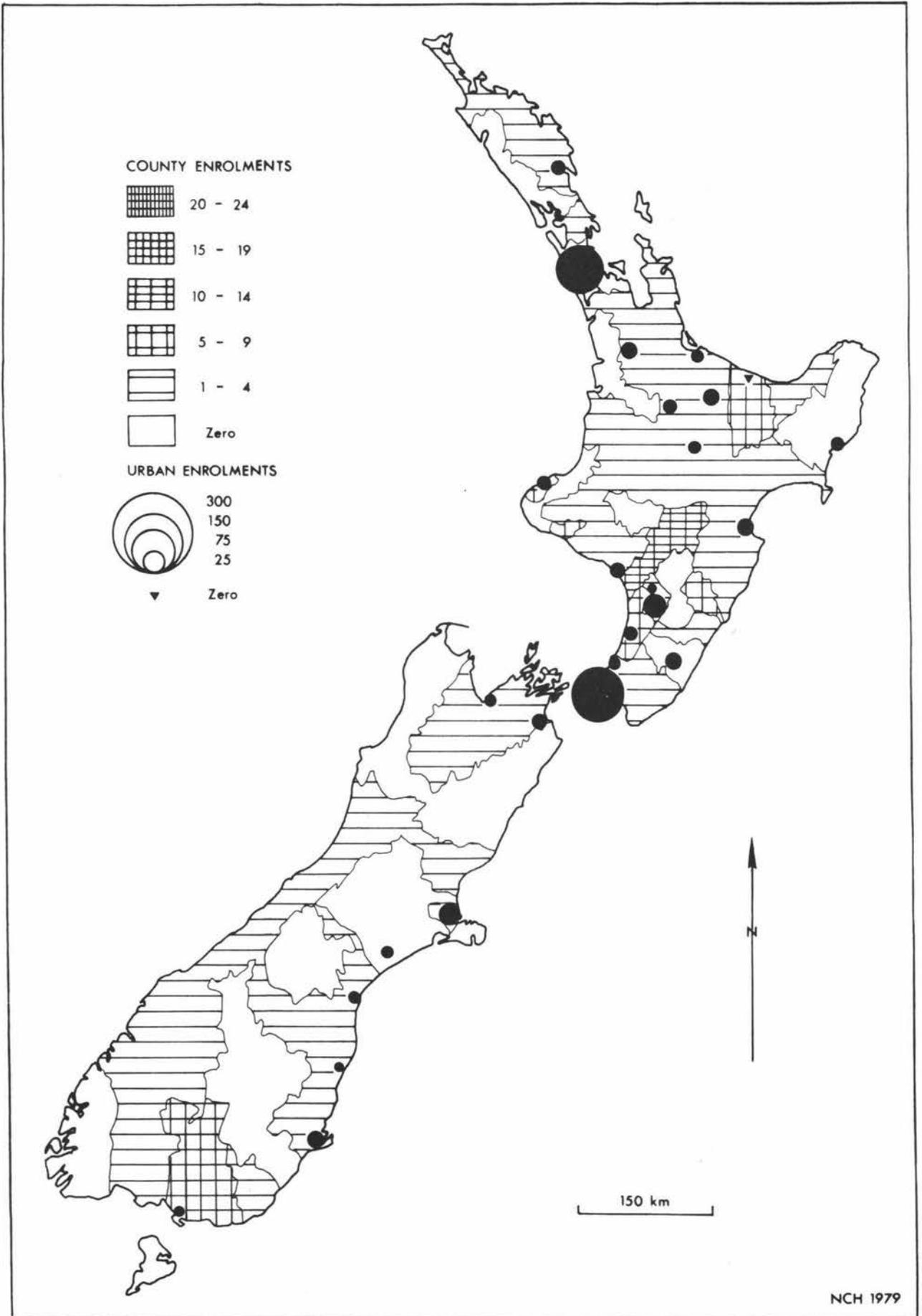


FIG. 5-15b Enrolments in Business Studies - 1976

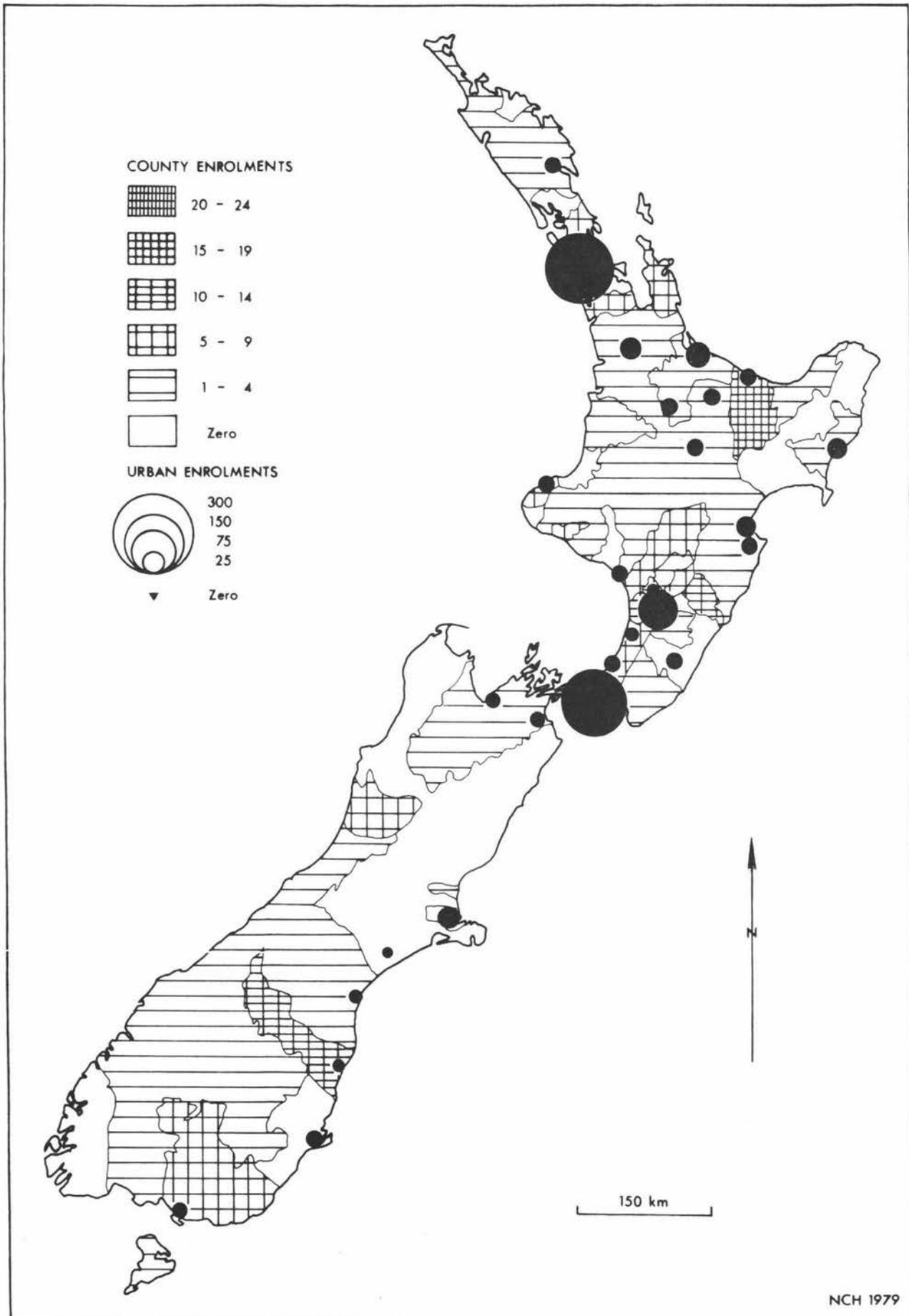


FIG. 5-15c Enrolments in Business Studies - 1979

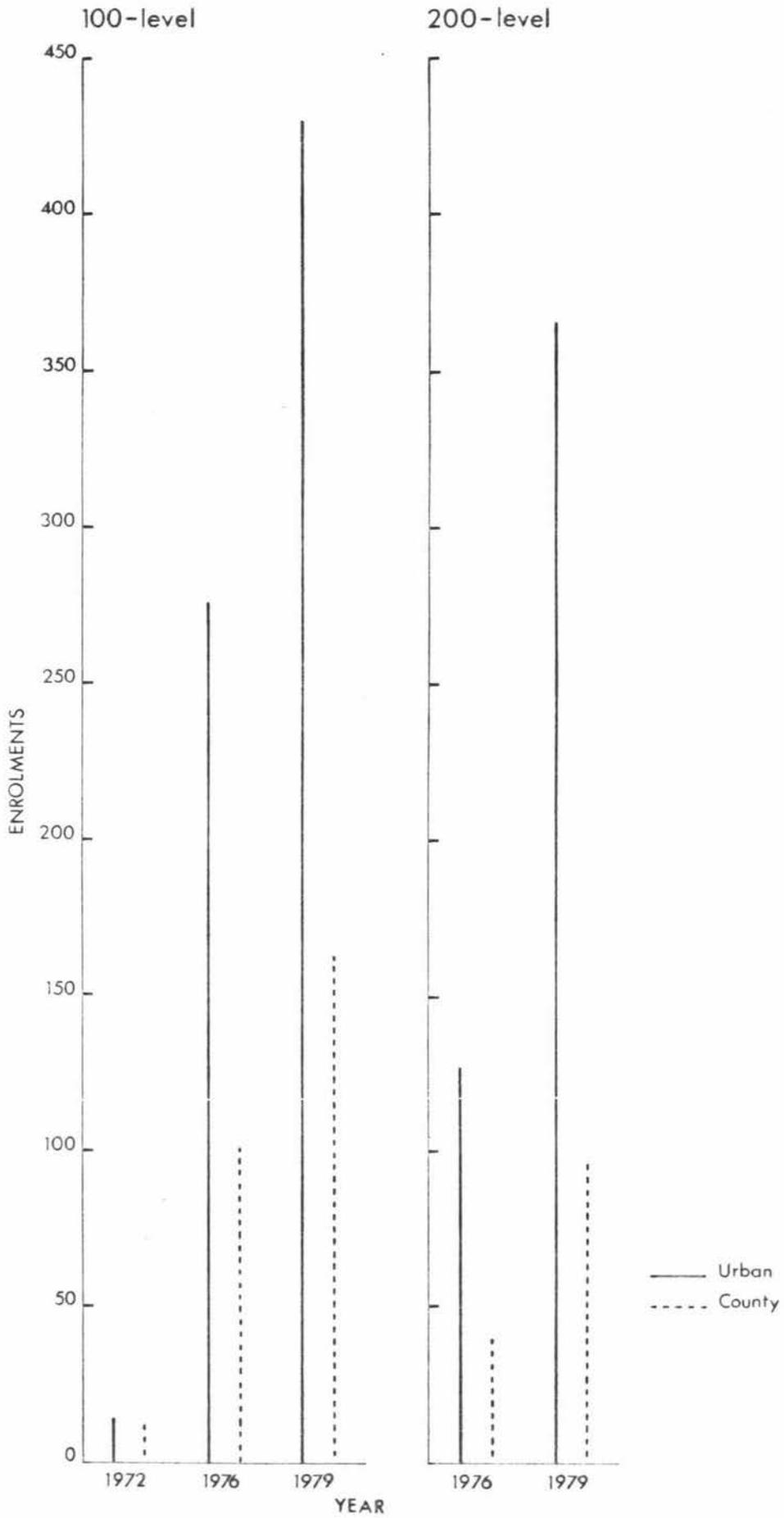


FIG. 5-16 Enrolments in Business Studies

to over 500 and by 1979 to over 1000. As Figure 5-16 clearly indicates enrolment growth is urban-oriented and as Figures 5-15b and 5-15c show major growth has been in Auckland and Wellington. Furthermore, because of its relevance to commerce and industry it has become North Island oriented.

The degree course as a whole, however, attracts a number of students with varying backgrounds and occupational interests. As with the Bachelor of Education degree this is a field of study which has direct economic pay-off, thus there is a steady increase in enrolments in the county areas.

THE DIFFUSION PROCESS

Because the maps portray only aggregate data it is not possible to determine from them the degree of relocation diffusion taking place. The general impression given is one of expansion diffusion and for the majority of cases this would be true. Relocation diffusion is, nevertheless, an important part of the process. Many students never move but there are many who do, often more than once. Of the 1979 students sampled through the questionnaire nearly one-quarter had moved at some stage during the time in which they had been enrolled as an extramural student and 41 percent of these had moved more than once.

In analysing data it is, therefore, important to know what is happening between periods. An example taken from geography shows that by going back over enrolments it is possible to trace student movements. Until 1973

there were no enrolments in the Nelson area. In that year the single enrolment was made by a student who had previously been enrolled for the course in Canterbury. The same student later moved again and was the first to be enrolled at 600-level in his new area. It is obvious that at the much wider scale of total enrolment many such relocations could be traced. As with total enrolment patterns, however, the influence of urban hierarchical dominance tends to detract from the real diffusion processes.

COMPARATIVE REGIONAL SUBJECT ENROLMENTS

The final set of graphs used in the description of subject growth is based on the percentage of students enrolled in each region (Figs. 5-17 to 5-23). By showing male and female percentages for each time period enrolment trends may quickly be evaluated. Females now exceed males in total extramural enrolments but subjects vary in their number of male and female enrolments. In some subjects (e.g. English and Education (BA)) there have been significant increases in the numbers of female students within areas, while in other subjects (e.g. Geography, Business Studies) male enrolments are still significantly more important.

THE RELATIONSHIP BETWEEN AREA AND SUBJECT ENROLMENTS

The examination of the geographical patterns of subject growth has shown that although most enrolments come from the main urban areas there are subjects which have a tendency to be either more urban-oriented or county-oriented. The last part of this chapter considers the proportional allocation of students in an attempt to see

FIGS. 5-17 to 5-23:
Comparative Regional Subject Enrolments

- 1 Northland
- 2 North Auckland
- 3 Auckland
- 4 Waikato
- 5 Coromandel
- 6 Bay of Plenty
- 7 Taupo
- 8 King Country
- 9 Taranaki
- 10 Wanganui
- 11 Manawatu
- 12 Wellington
- 13 East Coast
- 14 Hawkes Bay
- 15 Wairarapa
- 16 Nelson
- 17 West Coast
- 18 North Canterbury
- 19 South Canterbury
- 20 Otago
- 21 Southland

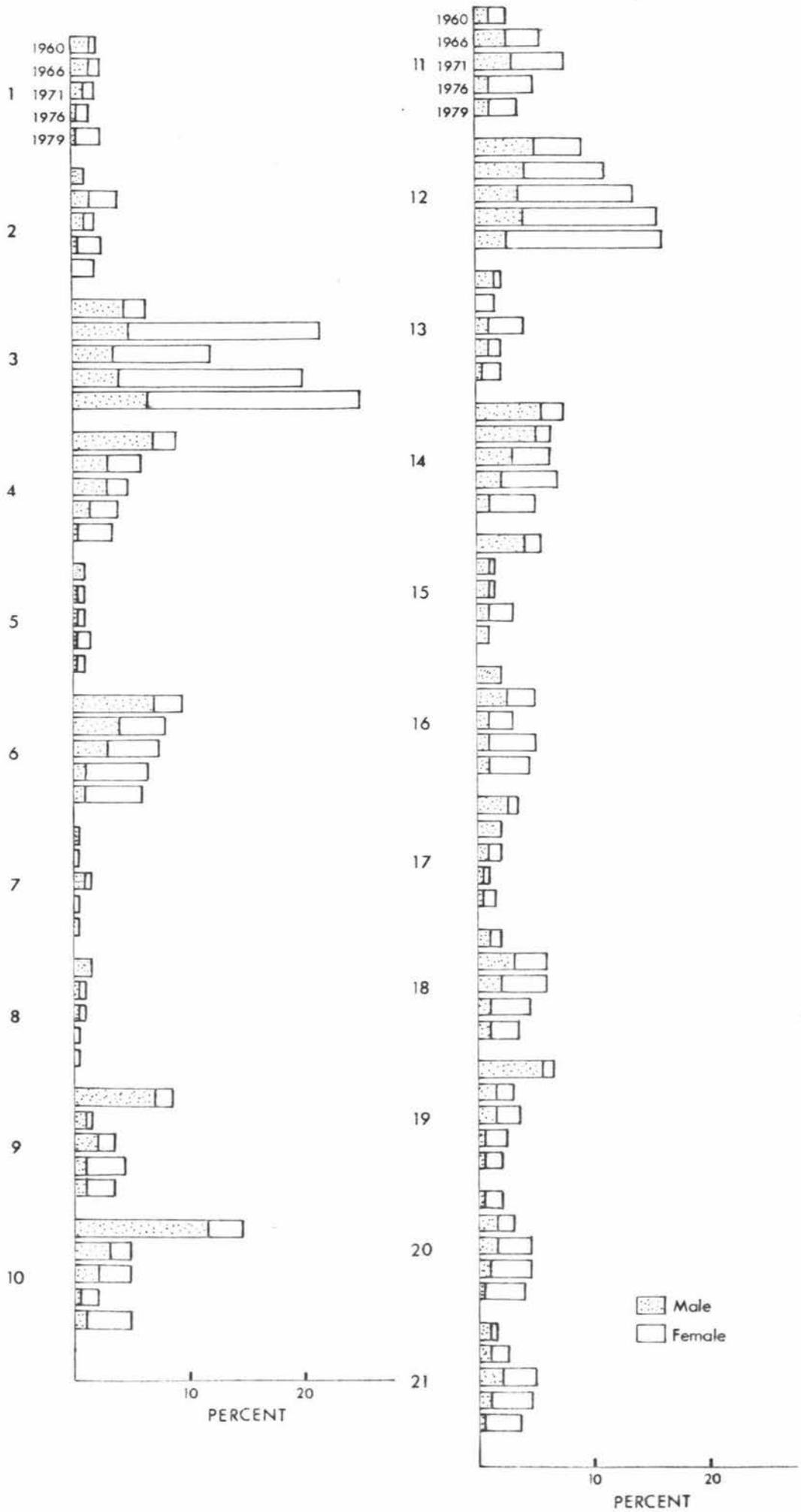


FIG. 5-17 English



FIG. 5-18 History

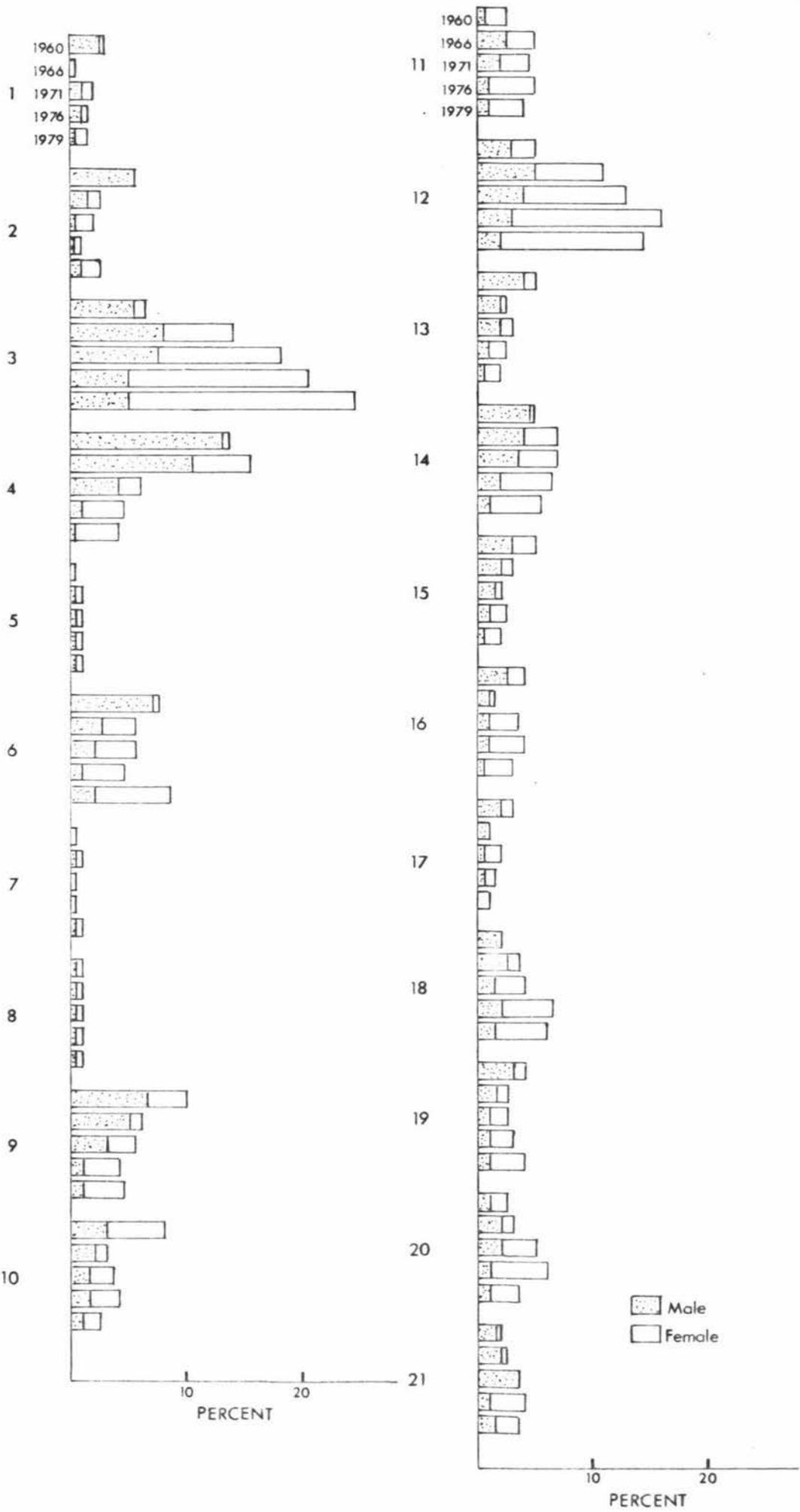


FIG. 5-19 Education (BA)

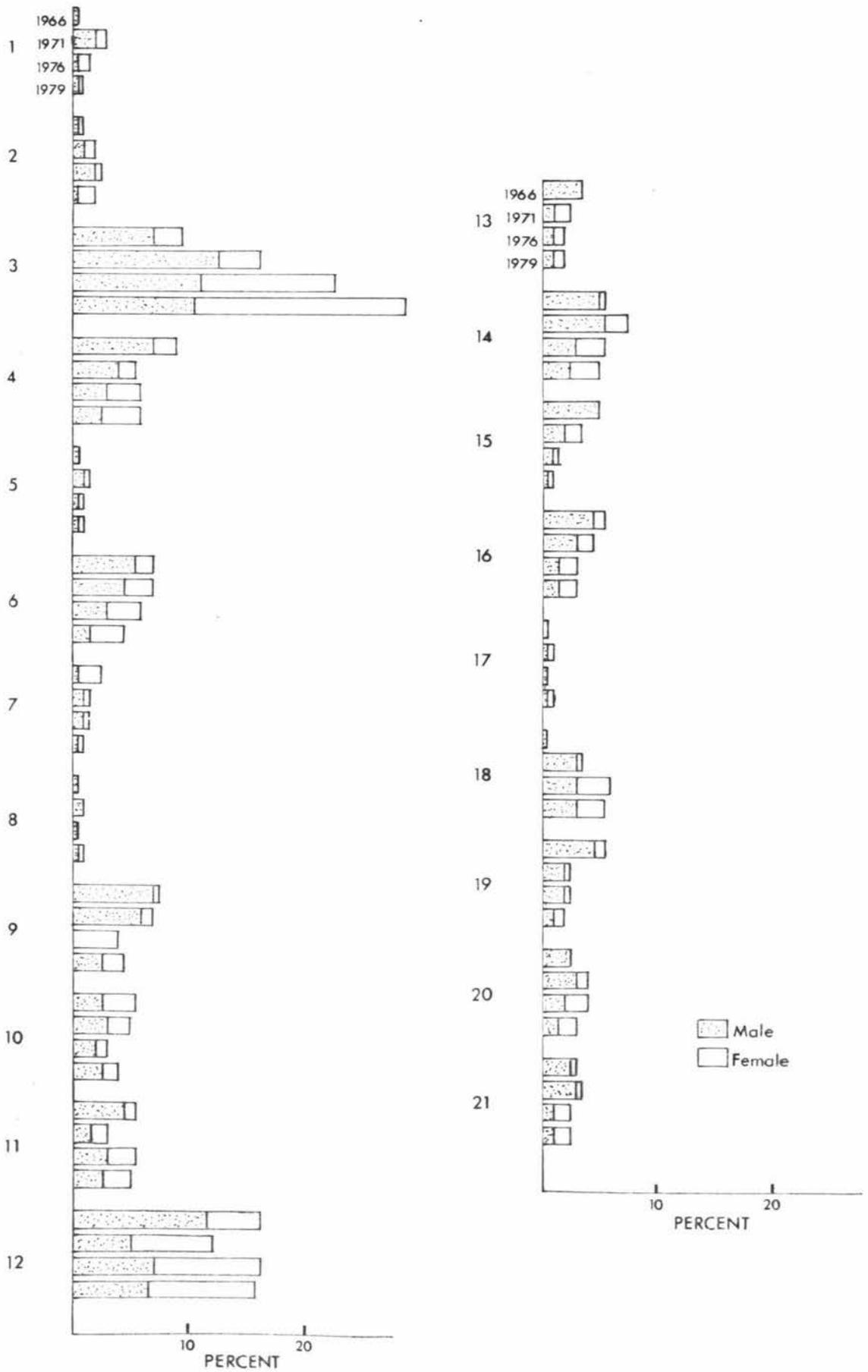


FIG. 5-20 Education (B.Ed & Dip.Ed)



FIG. 5-21 Modern Languages

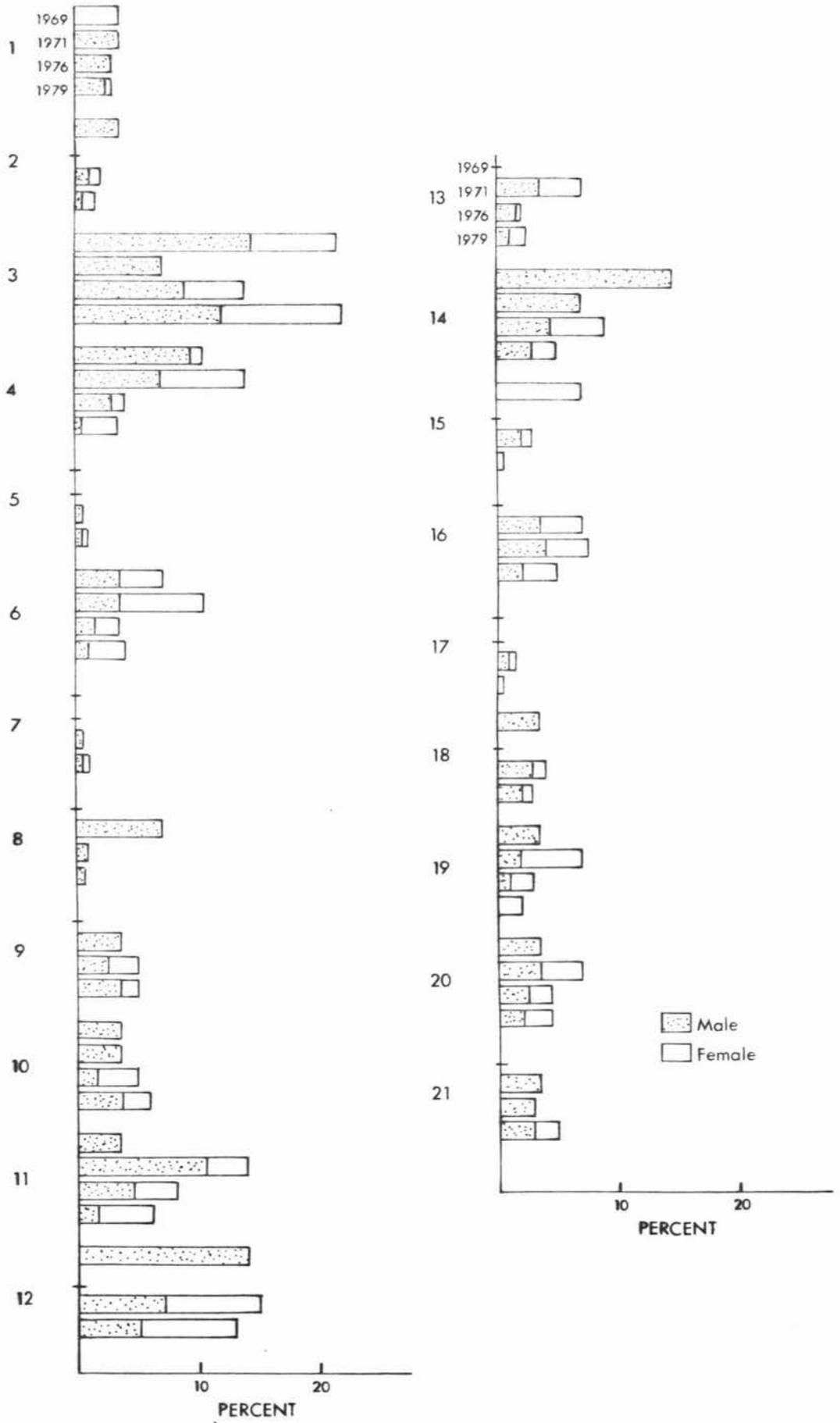


FIG. 5-22 Geography

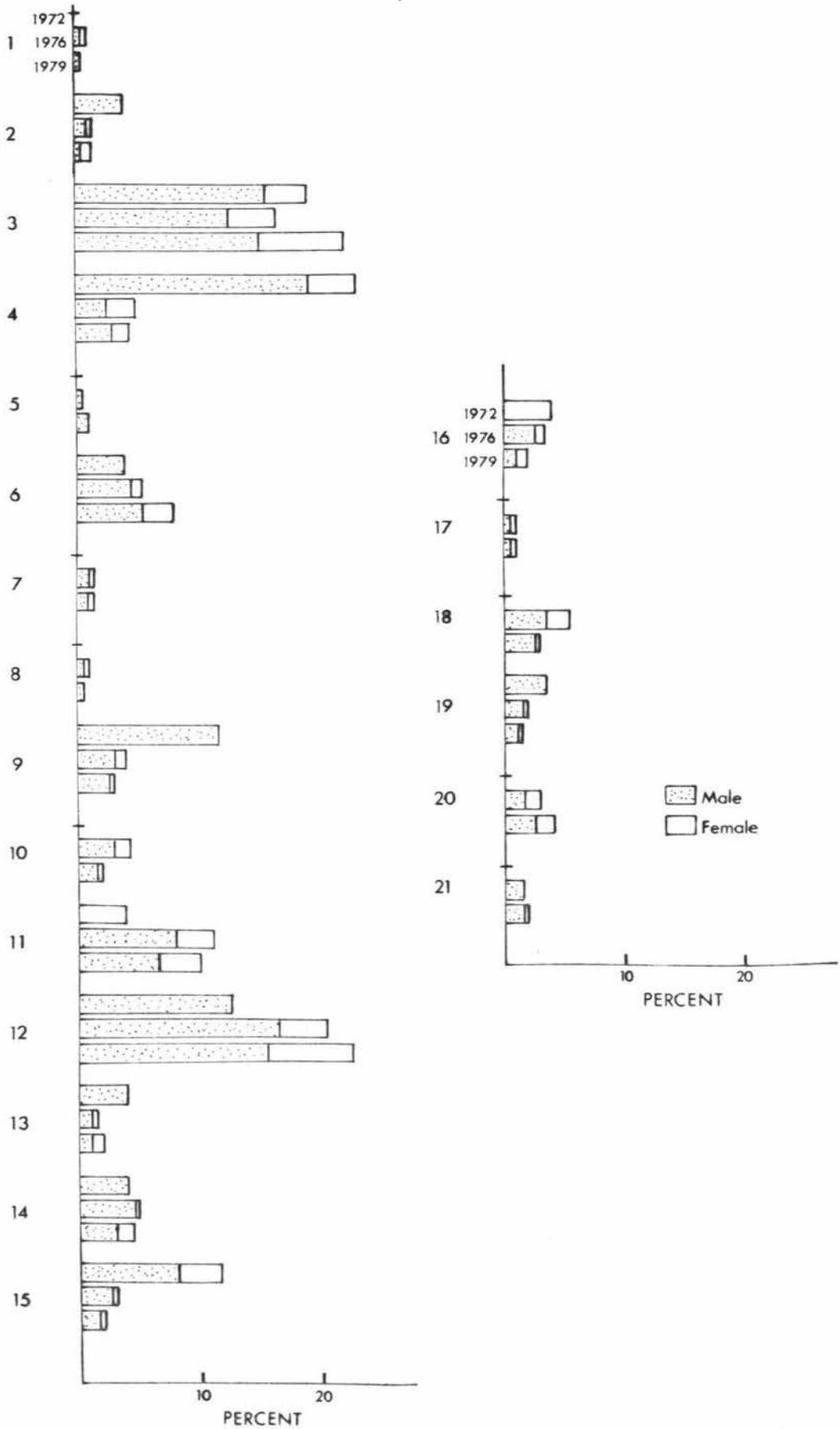


FIG. 5-23 Business Studies

if there are areas which are over- or under-represented within subject groupings. The hypotheses to be tested, and based on the major research hypothesis, are as follows:

1) There will be a difference between North Island and South Island subject enrolments.

2) There will be differences in regional subject enrolments.

3) There will be a difference between county and urban subject enrolments.

The subhypothesis is based on the assumption that the occupational structure of student enrolments within areas will influence subject enrolments. The test involves the examination of two urban areas (Auckland and Wellington) and is based on both the aggregate and the individual data sets:

1) There is a difference in the occupational structure of students in Auckland and Wellington.

2) There is a difference in subject enrolments between Auckland and Wellington.

The first of the major hypotheses suggests a difference between North and South Island subject enrolments. The test showed that differences do occur especially in Business Studies, Education (BA), Modern Languages and Geography. The South Island is significantly under-represented in Business Studies but over-represented in the other three subject areas. The H_0 was rejected with χ^2 df 6, .05 = 12.59, $\chi^2_{\text{calc}} = 30.03$ (Table 5-1).

TABLE 5-1: North Island and South Island Subject Enrolments

	Geog.	Hist.	BA Ed	B.Ed	Mod.Lang	Engl.	Bus.Stud.	Totals
North Island	203 (210.8)	500 (503.9)	820 (855.6)	871 (857.2)	397 (409.5)	377 (382.6)	908 (856.4)	4076
South Island	56 (48.2)	119 (115.1)	231 (195.4)	182 (192.8)	106 (93.5)	93 (87.4)	144 (195.6)	931
Totals	259	619	1051	1053	503	470	1052	5007

In order to test the second hypothesis the 21 regional groups were used (Appendix E). So that small cell frequencies would not distort the findings Northland and Auckland were combined. Likewise, the King Country and Coromandel were aggregated with the Waikato, and Taupo with the Bay of Plenty. With χ^2 df 96, $\sqrt{2}$ df - 1 was used as a normal deviate with unit variance. The calculated test statistic, $Z = 7.29$, meant that the H_0 of no significant difference between regions and subject enrolment could be rejected (Table 5-2). The most significant statistical differences were as follows:

- 1) Northland - Over-represented in English; under-represented in Business Studies.
- 2) Auckland - Over-represented in Education (B.Ed); under-represented in Business Studies.
- 3) Waikato - Over-represented in Education (B.Ed); under-represented in Education (BA).
- 4) Bay of Plenty - Over-represented in Business Studies and Education (BA); under-represented in Education (B.Ed).
- 5) Taranaki -
- 6) Wanganui - Over-represented in Geography, English and History; under-represented in Business Studies and Education (BA).
- 7) Manawatu - Over-represented in Business Studies; under-represented in Education (BA) and English.
- 8) Wellington - Over-represented in Business Studies; under-represented in Education (BA), History and Geography.
- 9) East Coast -

TABLE 5-2 Regional Subject Enrolments

	Geography	History	Education B.A.	Education B.Ed./ Dip.Ed.	Modern Languages	English	Business Studies	TOTALS
Northland	12 (8.9)	26 (21.4)	44 (36.3)	33 (36.4)	14 (17.4)	23 (16.2)	21 (36.3)	173
Auckland	69 (64.1)	144 (153.2)	256 (260.1)	305 (260.6)	113 (124.5)	119 (116.3)	233 (260.3)	1239
Waikato	14 (16.4)	46 (39.3)	55 (66.8)	80 (66.9)	32 (31.9)	25 (29.9)	66 (66.8)	318
Bay of Plenty	13 (19.6)	43 (46.9)	99 (79.6)	57 (79.7)	35 (38.1)	31 (35.6)	101 (79.6)	379
Taranaki	13 (11.5)	33 (27.6)	48 (46.8)	48 (46.9)	20 (22.4)	22 (20.9)	39 (46.9)	223
Wanganui	16 (9.2)	30 (22.0)	28 (37.4)	44 (37.4)	13 (17.9)	24 (16.7)	23 (37.4)	178
Manawatu	14 (15.3)	37 (36.6)	42 (62.1)	52 (62.3)	32 (29.7)	17 (27.8)	102 (62.2)	296
Wellington	33 (43.4)	87 (103.7)	153 (176.1)	163 (176.4)	93 (84.3)	77 (78.8)	233 (176.3)	839
East Coast	6 (5.0)	11 (11.9)	19 (20.2)	21 (20.2)	6 (9.6)	11 (9.0)	22 (20.2)	96
Hawkes Bay	12 (13.3)	28 (31.8)	57 (53.9)	56 (54.0)	33 (25.8)	23 (24.1)	46 (54.0)	257
Wairarapa	1 (4.0)	15 (9.6)	19 (16.4)	12 (16.4)	6 (7.8)	5 (7.3)	20 (16.4)	78
Nelson	13 (8.5)	24 (20.4)	35 (34.6)	34 (34.7)	16 (16.6)	21 (15.5)	22 (34.7)	165
West Coast	1 (2.8)	10 (6.7)	12 (11.3)	9 (11.4)	7 (5.4)	6 (5.1)	9 (11.3)	54
North Canterbury	8 (11.8)	26 (28.2)	63 (47.9)	58 (47.9)	24 (22.9)	19 (21.4)	30 (47.9)	228
South Canterbury	8 (7.1)	18 (16.9)	45 (28.8)	19 (28.8)	20 (13.8)	11 (12.9)	16 (28.8)	137
Otago	12 (10.0)	24 (24.0)	39 (40.7)	34 (40.8)	21 (19.5)	19 (18.2)	45 (40.8)	194
Southland	14 (7.9)	17 (18.9)	37 (32.1)	28 (32.1)	18 (15.4)	17 (14.4)	22 (32.1)	153
TOTALS	259	619	1051	1053	503	470	1052	5007

- 10) Hawkes Bay - Over-represented in Modern Languages.
- 11) Wairarapa - Over-represented in History; under-represented in Geography.
- 12) Nelson - Over-represented in Geography; under-represented in Business Studies.
- 13) West Coast -
- 14) North Canterbury - Over-represented in Education (BA) and Education (B.Ed); under-represented in Business Studies.
- 15) South Canterbury - Over-represented in Education (BA) and Modern Languages; under-represented in Business Studies and Education (B.Ed).
- 16) Otago -
- 17) Southland - Over-represented in Geography; under-represented in Business Studies.

The third hypothesis suggests a difference between county and urban enrolments. With χ^2 df 6, .05 = 12.59, χ^2 calc = 51.71 the H_0 that there is no significant difference between county and urban enrolments was rejected. The most significant differences show an over-representation of History and Education (B.Ed) and an under-representation of Business Studies and Modern Languages in the counties, while in the urban areas Business Studies are over-represented and History and Education (B.Ed) are under-represented (Table 5-3a). Two further tests showed significant differences between North and South Island urban areas (χ^2 df 6, .05 = 12.59, χ^2 calc = 39.97) but no difference between North and South Island counties (χ^2 df 6, .05 = 12.59, χ^2 calc = 3.25), (Tables 5-3b, 5-3c).

TABLE 5-3a: County and Urban Subject Enrolment

	Geog.	Hist.	BA Ed	B.Ed	Mod.Lang	Engl.	Bus.Stud.	Totals
Counties	88 (78)	226 (186.3)	300 (316.3)	358 (316.9)	130 (151.4)	158 (141.5)	247 (316.6)	1507
Urban areas	171 (181)	393 (432.7)	751 (734.7)	695 (736.1)	373 (351.6)	312 (328.5)	805 (735.4)	3500
Totals	259	619	1051	1053	503	470	1052	5007

TABLE 5-3b: North Island and South Island Urban Areas and Subject Enrolment

	Geog.	Hist.	BA Ed	B.Ed	Mod.Lang	Engl.	Bus.Stud.	Totals
North Is.	143 (146.8)	336 (337.3)	608 (644.6)	622 (596.5)	309 (320.1)	260 (267.8)	726 (690.9)	3004
South Is.	28 (24.2)	57 (55.7)	143 (106.4)	73 (98.5)	64 (52.9)	52 (44.2)	79 (114.1)	496
Totals	171	393	751	695	373	312	805	3500

TABLE 5-3c: North Island and South Island County Subject Enrolments

	Geog.	Hist.	BA Ed	B.Ed	Mod.Lang	Engl.	Bus.Stud.	Totals
North Is.	60 (62.6)	164 (160.8)	212 (213.4)	249 (254.7)	88 (92.5)	177 (112.4)	182 (175.7)	1072
South Is.	28 (25.4)	62 (65.2)	88 (86.6)	109 (103.3)	42 (37.5)	41 (45.6)	65 (71.3)	435
Totals	88	226	300	358	130	158	247	1507

The subhypotheses based on occupational structure assessed the degree of variation between the two major contributing urban areas (Auckland and Wellington). In the first test the H_0 of no difference was rejected (χ^2 df 2, .05 = 5.99, χ^2 calc = 11.01). The categories tested were those employed in education, medicine and others.¹ In Auckland the education and medical professions were over-represented and the others under-represented while in Wellington the opposite occurred. Of the seven subjects under study the second test showed that Auckland was significantly over-represented in Education (B.Ed) and under-represented in Business Studies while Wellington was significantly over-represented in Business Studies and under-represented in Education (B.Ed) (Tables 5-4a and 5-4b).

TABLE 5-4a: City and Occupational Interest

	Education	Medical	Others	Totals
Auckland	86 (79.6)	41 (33)	77 (91.5)	204
Wellington	54 (60.4)	17 (25)	84 (69.5)	155
Totals	140	58	161	359

TABLE 5-4b: City and Subject Enrolment

	Geog.	Hist.	BA Ed	B.Ed	Mod.Lan.	Engl.	Bus.Stud.	Totals
Auckland	63 (56.5)	128 (123.1)	228 (216.2)	279 (247.4)	102 (111.7)	97 (100.9)	220 (261.2)	1117
Wellington	31 (37.5)	77 (81.9)	132 (143.8)	133 (164.6)	84 (74.3)	71 (67.1)	215 (173.8)	743
Totals	94	205	360	412	186	168	435	1860

Where certain occupational structures are dominant it appears conclusive that there is a direct influence on enrolments. This may be intensified by the promotion of extramural studies by specific bodies such as Hospital Boards, Playcentre Organisations, Business Groups and Teachers' Colleges. As a general guide to the geographical distribution of all subjects offered for 1979 a table based on subject enrolments not discussed in this chapter is given in Appendix F. It should not be considered as definitive as it is based on the sample population only. It does, however, give some indication as to the popularity of the various subjects and to the diversity of subject enrolments within areas.

Thus, the availability of subjects creates certain demand factors. Demand is by no means a passive variable for it can be both stimulated and inhibited by differing social conditions. Miller (1973) has suggested an interesting approach to the question of take-up which distinguishes back-log demand from derived demand. Back-log demand arises from potential students awaiting an opportunity to engage in a subject. As the University departments added to their basic papers and higher levels of study became possible more students were able to avail themselves of the opportunity to study.

Derived demand arises from changes in the occupational structure, from technological advances which give rise to new forms of employment, and from changed expectations of business and government concerning threshold qualifications for particular levels of work. In themselves these

reflect some measure of educational inflation. The response to papers offered in the applied subjects, B.Ed and Business Studies in particular, has clearly been demonstrated during the analysis of this chapter.

FOOTNOTES

- 1 The Outpost Scheme has been established to provide training centres for mature students who, for domestic reasons, are unable to attend Secondary Teachers' College at either Auckland or Christchurch.

CHAPTER 6 - PART 1

CONCLUSIONS

The analysis has shown that the diffusion of the Extramural Studies programme has its genesis in the social space of the occupational structures from which the extramural population is drawn. While the reason why people choose to study extramurally is clearly linked to non-spatial variables the outcome of their decision however, is reflected in physical space.

In the early years teachers dominated the enrolments. Since then they have gradually become proportionately less significant while other professions have increased their enrolment numbers. Initially, a measure of hierarchical diffusion can be seen at work within the various occupational structures, for it is those among the higher ranks (e.g. school principals, departmental inspectors and advisors, nursing tutors, administrative staff and supervisors), who are the first to begin extramural study. Sometimes this is caused by a restriction imposed by the University which requires professional experience before enrolment (e.g. Diploma in Educational Administration, Diploma in Health Administration, Diploma in Training and Development), but usually it is those in positions of responsibility who first see the value of such programmes. Gradually the diffusion process gains momentum as those in the positions of responsibility suggest the programme

to other members of the profession.

The existence of groups is, therefore, extremely important in the information network controlling spread, for information flows most readily when both the possessor of an item of information and the seeker of such information belong to the same group. Hägerstrand (1953) emphasised the importance of socio-economic status when he discussed how the links in the networks of private communications differs in range between socio-economic groups.

A number of factors in relationship to enrolment patterns and the diffusion of information have been considered and it is quite clear that variables relating to a person's age, social status, financial position, mental ability, values and experience, and the norms or standards of the group to which he belongs are important in the decision to study extramurally. Clearly, most extramural students come from the middle class. Sixty-two percent of respondents to the questionnaire survey of 1979 extramural students were employed in professional and managerial positions while nearly all of the remainder held positions of responsibility within their respective fields of employment. In the case of housewives and retired people, over 70 percent indicated that they had been trained in one or other of the professions.

Morrill and Manninen (1975) noted that the introduction of social class leads to 'blotchiness' in the pattern of diffusion in space and time and since social space has a physical spatial structure the thesis has sought to explain the patterns which have emerged and are emerging

at both the individual subject level and at the aggregate level.

Overseas research has shown that the distribution of correspondence students does not vary significantly from the distribution of the total population and, if anything, correspondence study is relatively more popular in urban areas (Wedell, 1970). In order to assess the distribution patterns for extramural students two major hypotheses were tested. The first which suggested a positive relationship between population size and enrolment was found to be true. The relationship has increased steadily over the last 20 years. The isolation of county and urban area populations indicated that within these particular levels of aggregation there are definitely areas which are over- or under-represented by extramural students. It is quite clear that Auckland, because of its extreme values for both the dependent and independent variables, creates an artificially high correlation. When the urban areas excluded Auckland from the relationship the correlation weakened.

Since spatial interaction involves the interaction of people between locations the second hypothesis - that there is a negative relationship between distance from Palmerston North and enrolment - was examined by using the index population divided by distance (P/D). Regression analysis again indicated a strong relationship although whereas the previous test had indicated that Wellington was over-represented and that Auckland was under-represented, the introduction of the distance factor now reversed their positions. Thus, Wellington's proximity to Palmerston North cannot be

considered as the major reason for over-representation by the extramural population.

As with straight population when the relationship was measured at different levels of aggregation it was found that as the independent variable decreased in size the correlation weakened. Although extramural enrolments in the South Island are under-represented distance-decay was found not to be a factor in the overall distribution of enrolments. Nevertheless, distance factors can have some effect on subject choice. For some students subject courses for the year may rest solely on the basis that two (or more) paper's vacation courses coincide, or that they immediately follow on from one or another, while for other students the decision to opt for papers with no compulsory course is more important. It also appears that while the metropolitan areas are characterised by time-space convergence many of the peripheral areas are becoming more remote and are characterised by time-space divergence. Therefore, although the opportunity to participate in Extramural Studies is aspatial, because postal services are aspatial, a compulsory vacation course may introduce a distance factor which, while it may not affect the actual decision to enrol, may affect the choice of paper.

Interaction between places and people, however, does not occur in isolation. It is generated by the forces of supply and demand and these are controlled by the principles of complementarity, intervening opportunities and transferability. The demographic and industrial structure of an area is, therefore, an important consideration and

is reflected in the geographic pattern of enrolments.

Thus, the pattern of extramural enrolments is definitely a function of population size and as the national population continues to become concentrated in the largest centres it is inevitable that extramural enrolments will similarly become more concentrated. The smaller centres which often act as 'stepping stones' in the process of socio-economic mobility frequently do not have a sufficient core of students to maintain expansion.

In the consideration of the spatial distribution of subject enrolments it was noted that the availability of subjects creates certain demand factors. The response to papers in the applied subjects, in particular, clearly demonstrates a degree of educational inflation brought about by changes in occupational structures, technological advances and changed expectations of business and government concerning threshold qualifications for particular levels of work. There are significant statistical differences between areas and subject enrolments which, in turn, can be related to the differences in industrial structures. Of the six selected subject fields it was the traditional, interest-type subjects which were over-represented in the counties and the applied subjects which were over-represented in the urban areas. The difference between North and South Island enrolments, however, is created mainly through urban differences. These urban differences also create differences within the traditional and applied subject fields. Auckland and Wellington, for example, exhibit quite marked differences in occupational structures.

In Auckland, therefore, where proportionately more students are engaged in education and medicine there is an over-representation of B.Ed papers. On the other hand Wellington, which has a greater proportion of public servants, is over-represented in Business Studies. Again, it is the North Island which is over-represented in the applied fields, and this may indeed be one of the reasons why the North Island is over-represented in total enrolments. With over 44 percent of the total population living in the northern half of the North Island it is quite obvious that this area is supporting an increasingly larger proportion of the susceptible population.

By constructing a series of maps and graphs it was thus possible to trace the diffusion of total enrolment and subject enrolment at various levels of aggregation. Quite clearly subject enrolments do not grow at the same rates. Any combination of factors, some purely administrative, may be responsible but much is dependent upon the general demand at a specific point in time and upon the university's ability to supply that demand.

Females now exceed males in total enrolments but subjects vary in their ratio of male to female enrolments. Some subjects have a greater propensity to attract females (e.g. English; Education, B.A.) while males tend to dominate enrolments in the applied subjects (e.g. Education, B.Ed; Business Studies; Geography).

Most subject growth takes place at the urban level, thus any major decline in subject enrolment can usually be attributed to a decrease in the number of enrolments from

the urban areas. At county level, however, where the numbers enrolled are often extremely small, random variations can account for many of the patterns which emerge.

The diffusion process is, therefore, complex. Because the susceptible population is a mobile one the process of expansion and relocation diffusion operate not only within social space but also in physical space. There is a good deal of movement both laterally and vertically within the various occupational structures and between geographical areas. In general, the continuing northward movement of people tends to move through the urban system from small to large communities. The occupational structures from which the majority of extramural students come are urban oriented, therefore, in general, the distribution pattern of enrolments coincides with the urban hierarchy. In physical space the process of expansion diffusion is thus blurred by the dominance of the urban hierarchy.

Thus, while the thesis has been able to describe both the spatial and non-spatial characteristics of the extramural population and to provide some explanation for the pattern of enrolments it cannot provide a basis for any detailed prediction of future regional enrolments. The degree to which these can be predicted is limited by the nature of the potential population of extramural students. Much is dependent on social and economic trends in society. It would appear, however, that unless there are major changes in New Zealand's space-economy then one is justified in using the present distribution patterns as indicators for future growth.

CHAPTER 6 - PART 2

IMPLICATIONS

In recent years there has been much debate on the concept of 'continuing education'. There has also been a growing awareness of the need for 'second-chance' education. Traditionally university education has been considered as the ultimate level in the life-path of formal education; a path which follows three phases (primary, secondary and tertiary) and which may be terminated at either the second or tertiary phase.

In New Zealand the policy of 'open-entry' to a university has always been considered the right of the adult and there has always been provision for students to study as part-time or external students. For New Zealanders the university has been viewed not so much as an 'enclave of the academic elite' but rather as another rung in the ladder for the able and aspiring (Renwick, 1976). Over the years individuals and organisations outside the university have built up complex patterns of expectation of the university system. As was demonstrated by the respondents to the questionnaire used in this thesis students of other institutions (e.g. Teachers' College) expect to be able to undertake concurrent studies at university; public and private employers are becoming more aware of the benefits of enabling employees to undertake university study, while an even wider range of individuals are deciding to recoup lost opportunities or renew interest in

studies begun earlier in life.

Thus, the contribution which the Extramural Studies programme is making towards 'continuing education' is a very positive one. Some writers (e.g. Chesson and MacDonald, 1979) may question the 'elitist' nature of the participants in the extramural programme, but it should also be emphasised that equity is not necessarily achieved by treating equally individuals who stand quite different chances in the competition for qualifications.

A move has already been made to provide courses in what may be termed 'continuing professional education'. Courses such as these, designed specifically for people in mid-career, are fully extramural. The demand for professional courses is indicative of the needs of society. In recent years there has been a tendency for people to move between institutions, realising that each may have a specific phase in the course of one's training or retraining, for as Perry (1976,281) stated:

The rate of acquisition of new knowledge is now so fast - and it is still accelerating - that the idea that a man, during his initial education can be so fully educated that he can cope successfully with his chosen career throughout his working life is no longer tenable.

Important as these moves are, perhaps the one which will have the most impact during the next few years will be the introduction of 300-level papers and the realisation for many that a degree can be completed fully extramurally. It also raises a number of implications, for not only will the present extramural population no longer be forced to move to a university city in order to complete their degree, but many younger, prospective internal students may reassess

the situation and combine extramural study with employment. If, indeed, an influx of younger students becomes a reality then it will not only mean a restructuring within the university system, but many of the towns outside the six university centres will also have to restructure employment opportunities.

For the Extramural Department itself the problem will be one of intensifying support links. It may be that at present extramural students prefer to work on their own, and do not overly support the ad hoc groups that some areas have tried to organise during recent years, but nevertheless there are students who would benefit from more personal and frequent contact with university personnel (Appendix D). The question is, of course, one of finance, time, and staff. Visits from lecturers can and do heighten interest especially at 100-level. Respondents to the 1979 Area Convenors questionnaire also indicated that a visit by a lecturer to an area can have a positive effect on future enrolments.

The potential for extramural credit courses has yet to be fully exploited. It is one thing to make the educational opportunity available and another to create conditions under which individuals know it exists and want to make use of it. Much research has been done in the assessment of those students who participate in programmes of 'continuing education'. Perhaps it is now time to look at the non-participants and to examine their reasons for non-participation. During the course of this thesis it has been emphasised that for interaction to take place the demand for a service and the supply of that service

must complement each other. If the University really wishes to promote its programme then it must also seek to provide answers to the question of equity for those people outside the mainstreams of urban influence. Liaison between community colleges and community centres may provide some of the contact needed, but as Harrington (1977) points out research in the USA has shown that people are unwilling to travel more than 15 kms for their education. If regional tutors and advisors are to be appointed then a whole set of new behaviours will have to be learnt and accepted by extramural students.

The thesis has demonstrated the importance of information diffusion, but to be fully objective research at different scales needs to be attempted. Analysis at both the macro- and the micro-level are important but the implementation of ideas may only be made possible by the decisions reached through the investigation of the area inbetween levels. Longitudinal studies tracing all the networks of communication before, during and after the decision making process are needed. Thus future studies need to be related to all member of the susceptible population within a specific geographical area. In this way those areas which are under-represented by extramural students may be shown to be making more use of the intervening opportunities created by less formal educational programmes. Unless people perceive a need to study extramurally and act upon it there can be no demand.

Educational change is never fast. It is a gradual process which may take many years before the real results

are experienced. There will always be some people who will not take advantage of the programmes offered and because of this the rate of diffusion will never attain 100 percent. If, however, the opportunities offered are to be accepted and fully exploited then in society at large there will need to be changes in attitudes, orientation and expectations.

APPENDICES

APPENDIX A THE RELATIONSHIP OF EXTRAMURAL ENROLMENTS
TO THE TOTAL UNIVERSITY POPULATION

Year	Total New Zealand University Enrol- ments	Massey Extra- mural Enrol- ments	Extramural Per- centage of Total Enrolments
1960	15 109	562	3.7
1961	16 067	741	4.6
1962	16 445	564	3.4
1963	17 628	629	3.6
1964	19 062	918	4.8
1965	21 443	1174	5.5
1966	23 651	1274	5.4
1967	25 789	1358	5.3
1968	28 296	1502	5.3
1969	30 943	1734	5.6
1970	33 925	2017	5.9
1971	36 294	2205	6.1
1972	37 630	2578	6.9
1973	38 178	2955	7.7
1974	39 113	3614	9.2
1975	41 058	4122	10.0
1976	45 014	5118	11.4
1977	46 513	5664	12.2
1978	47 876	6029	12.6
1979	51 733	6195	12.0

Source: Adapted from University Student Statistics-
Massey University.

APPENDIX B SUBJECT STRUCTURE

Note: + compulsory vacation course
 * restricted numbers

ENGLISH

1960-1962	- Stage 1
1963-1972	- Stage 2+
1973	- change to paper system 2 x 100 co-requisites 3 x 200+
1974-1977	2 x 100, 4 x 200+ (& N.Z. Literature*)
1978	2 x 100, 4 x 200+ (N.Z. Lit. & New Literatures in English*)
1979	2 x 100, 5 x 200+ (New Lits in English*)

In earlier years English was a basic component of any Humanities/Social Science degree. First offered in 1960, first year papers have always been unrestricted as have most 200-level papers, although the retaining of a concurrent 101/102 paper until 1979 has probably been a constraint for some students who might otherwise have taken a single 100-level paper. N.Z. Literature was, until 1979, a restricted paper. Preference was given to students who had already completed the other 200-level papers for an English major. Now, N.Z. Literature reaches a wider range of people.

HISTORY

1960-1963	- Stage 1
1964-1972	- Stage 2+
1973	- change to paper system 4 x 100 3 x 200+
1974	4 x 100, 5 x 200+

1975	4 x 100, 6 x 200+
1976	4 x 100, 5 x 200+
1977-1979	4 x 100 (Pacific Is. to 1900*) 6 x 200+ (Early N.Z. Hist. and Race Relations:N.Z.and Australia*)

Established in 1960 it has no specified core of compulsory papers. Since 1977 restrictions have been imposed on certain N.Z./Pacific Islands papers at the 200-level.

EDUCATION

1960-1962	- Stage 1 B.A.
1963-1964	- Stage 2 B.A.+
1965	- Dip Ed - 3 papers
1966	- Dip Ed - 5 papers
1967	- Dip Ed - 6 papers
	- 2 courses+
1968	- Dip Ed - 7 papers (Educ. Guidance & Testing for Teachers +*)
1969	- Dip Ed - 5 papers (Educ. Guidance & Testing for Teachers +*)
1970	- Prof. Ed + - Dip Ed - 7 papers (Educ. Guidance & Testing for Teachers +*)
1971	- Prof. Ed 2 + - Dip Ed - 6 papers (Educ. Guidance & Testing for Teachers +*)
1972	- Dip Ed - 7 papers (Educ. Guidance & Testing For Teachers +*)
1973	- change to paper system B.A. 2 x 100, 3 x 200+ B.Ed 1 x 100, 6 x 200+ Dip Ed - 8 papers (Educ. Admin* Testing for Teachers +*)
1974	B.A. 2 x 100, 4 x 200+ B.Ed 1 x 100, 2 x 200+ Dip Ed - 7 papers (Testing for Teachers+, Educ. Guidance and Educ. Admin +*)
1975	B.A. 2 x 100, 3 x 200+ B.Ed 1 x 100, 4 x 200+

	Dip Ed - 7 x 600 (Testing for Teachers+, Educ. Admin*)
1976	B.A. 2 x 100, 4 x 200+ B.Ed 1 x 100, 4 x 200+ (except Teaching of Maths) Dip Ed 5 x 600 (Testing for Teachers+)
1977	B.A. 2 x 100, 4 x 200+ B.Ed 1 x 100, 6 x 200+ (except Teaching of Maths) Dip Ed 6 x 600 (Testing for Teachers+)
1978	B.A. 2 x 100, 5 x 200+ B.Ed 1 x 100, 5 x 200+ (except Teaching of Maths) Dip Ed 5 x 600
1979	B.A. 2 x 100, 4 x 200 (Educ. Sociology and Educ. Research+) B.Ed 1 x 100, 5 x 200 (Curriculum Theory+) Dip Ed 6 x 600

The B.A. papers were established in 1960. The 36.101 paper (Education and Society) used to have a much broader scope and could be used in conjunction with a number of subjects. Now it has become more educationally oriented. 36.102 (Human Development) is used as a reserve paper because it is acceptable to a number of degree structures.

In 1965 the Diploma in Education was introduced, the constraint here being ones involvement in teaching. 1970 saw the introduction of Professional Education papers and the opening up of university papers directly related to the needs of primary school teachers.

Within the B.Ed structure provision has been made for some papers to be designed by Teachers' College lecturers in consultation with Massey and for these papers to be taught by Teachers' College staff. A Massey assessor is required. Both Music and Physical Education are taught by this method

at Palmerston North Teachers' College although the students involved are not enrolled extramurally. However, Auckland and North Shore Teachers' College run a supervised curriculum in Physical Education and although the students are not taught through Massey they are required to be enrolled, in conjunction with other selected papers, as Extramural students.

Since 1976 it has been possible for a teacher to complete his 300-level Bachelor of Education papers as an Extramural student. The size of this group is, however, restricted and there is no paper choice. Students are required to attend a 7-week summer school at the end of the internal academic year.

None of the 100 and 200 level papers are restricted, although students are constrained in the number of education papers they take as only certain papers are creditable to a BA or B.Ed degree. Education papers, because of their professional application, have experienced relatively large roll numbers.

MODERN LANGUAGES

- 1961 - French Reading Knowledge
- 1963 - French 1
- 1964 - German Reading Knowledge
- 1965 - French 2+
- 1966 - French and German Reading Knowledge became French and German Studies
- 1967-1970 - German 1
Japanese 1
- 1971 - German 2+
- Japanese 2+
- 1972 - French and German Studies deleted

1973 - change to paper system
 French 3 x 100, 4 x 200 (3 x 200+)
 German 3 x 100, 3 x 200+
 Japanese 2 x 100*, 2 x 200+

1974 Japanese 3 x 100, 2 x 200+, 1 x 600*

1975 Japanese 3 x 300, 3 x 200 (2 x 200+)
 3 x 600

1976 French 3 x 100, 2 x 200+
 German 3 x 100 (2*, 2+)
 3 x 200+
 Japanese 3 x 100 (2 concurrent), 4 x 200 (3+)
 4 x 600 (1+)

1977 French 4 x 100, 3 x 200+
 German 3 x 100 (2x +), 3 x 200+
 Japanese 3 x 100, 4 x 200 (3x +)
 6 x 600 (1x +)

1978 French 4 x 100, 2 x 200+
 German 3 x 100 (2x +), 3 x 200+
 Japanese 2 x 100, 3 x 200 (2x +)
 6 x 600 (1x +)

1979 French 4 x 100, 3 x 200+
 German 3 x 100 (2x +), 3 x 200+
 Japanese 3 x 100, 4 x 200 (3x +)
 6 x 600 (1x +)

GEOGRAPHY

1969 - 1971 Stage 1 +*

1972 Stage 2 +*

1973 - change to paper system - 1974
 2 x 100 +* 3 x 200 +*

1975 2 x 100 +*, 4 x 200 + (201, 205 *)

1976 2 x 100 +*, 5 x 200+ (201, 202, 205 *)
 2 x 600 + (602, 606)

1977 2 x 100*, 4 x 200+ (202, 205* 201 alt. yrs)
 2 x 600+* (611, 615)

1978 2 x 100*, 4 x 200+ (201, 205* 202 alt. yrs)
 3 x 600+* (605, 610, 699)

1979 2 x 100 (102+*), 3 x 200+
 3 x 600+* (601, 602, 606)

Geography was introduced as an Extramural subject in 1969. The January vacation course was compulsory and the restricted intake rigidly enforced. However, when the course was restructured the compulsory January course gave way to a compulsory May vacation course and a larger intake was possible. In 1978, the May vacation course at 100-level became voluntary and in 1979 voluntary weekend courses took the place of a vacation course.

Some papers, notably 201, 202 are offered in alternate years. This has arisen since the introduction of the Diploma in Social Science papers in 1976.

Apart from the restrictions in numbers placed on most papers Geography through the nature of the discipline does not attract large numbers of students other than in the more general courses.

BUSINESS STUDIES

1972	(BBA)	Financial Management 1 +
1973		F.M. Stage 1 +* F.M. Stage 2 +
1974	(BBS)	4 x 100 (101/2 +), 4 x 200 (211/2 concurrent)
1975		4 x 100 (101/2, 121 +), 5 x 200 (3x +)
1976		4 x 100 (101/2 +), 8 x 200 (6x +)
1977		4 x 100 (101/2+), 9 x 200 (7x +, 1*)
1978		4 x 100 (101/2+*), 10 x 200 (8x +)
1979		4 x 100 (101/2+*), 12 x 200 (9x +)

The course arose out of papers offered for the BBA degree - financial management papers being established in 1972.

14.101/102, which must be taken concurrently, became

restricted papers in 1978; up until then there were no restrictions, although a pattern of co- and pre-requisites is required.

At present this subject reflects the desire to study in a field which has economic pay-off, and has consequently experienced fast growth. The number of Diploma papers offered by the Faculty also reflects increased demand although, because of the number of restrictions and course interchanges, these were not considered within the basic data set.



Massey University

PALMERSTON NORTH, NEW ZEALAND
Department of Geography

The following questionnaire is designed to collect part of the data for an M.A. Thesis which is concerned with the growth and distribution of Extramural study in New Zealand.

All the data being used relates to initial enrolment so that even if you have subsequently withdrawn from some or all papers this year we would still like you to state ALL the papers you were enrolled in at the start of the academic year.

Please ensure that you answer all questions.

(A) Please supply the following information about yourself:

1. Male () Female ()
2. European () Maori () Polynesian () Other-specify () _____
3. Age in years ()
4. What is the structure of your household?
 - 1 () Married couple without children/without children at home
 - 2 () Married couple with children at home
 - 3 () Non-family - single male
 - 4 () Non-family - single female
 - 5 () Non-family - shared
 - 6 () One family with other persons (other than children)
 - 7 () Two families (or more)
 - 8 () Solo parent family
 - 9 () Other
- 5a. What is your occupation? _____
Please give as clear a description of what is involved in your work as possible e.g. Primary school teacher, Teachers' College lecturer, Inspector-weights and measures, Passport Officer, Hotel Manager, Bank Manager, Housewife, etc.
- 5b. If "housewife" please state your former occupation. _____
6. What are your completed qualifications?(you may tick more than one as appropriate).

School Certificate ()
 University Entrance ()
 Bursary/Scholarship ()
 University Degree: Bach () Post-Grad () Masters () Ph.D. ()
 Other e.g. Dip ()
 Other Tertiary () please specify _____
 Other (specify) _____
7. What qualification are you enrolled for?
Degree () Diploma () COP ()
8. What is your main reason for study?
 - () Personal interest
 - () Present employment related
 - () Change of occupation or re-entry into workforce

(B)

9. Please list all the papers you were enrolled in at the beginning of the year e.g. 45.231, 77.101.

If you received a yellow questionnaire along with this Newsletter, you may wonder what it's for and where it came from. The questionnaire is designed to collect part of the data for an M.A. thesis in Geography at present being undertaken by Ngaire Hunt. Ngaire was an extramural student herself for a number of years. Her background in Education and Geography has led to an interest in how Extramural Study has spread through different areas in New Zealand.

Geographic inquiry into Extramural Study is something new. Some overseas universities have given cursory consideration of geographical factors in the distribution of their external students, but no in-depth work has yet been attempted in the field. All of you, who have received a questionnaire will be able to help in building up a comprehensive picture of the growth and distribution of extramural study over the last twenty years. If you return the completed questionnaire as soon as possible the results and conclusions drawn from it will help in the prediction of future regional growth patterns.

APPENDIX C-3

DEPARTMENT OF GEOGRAPHY

20 August 1979

MEMO TO: VACATION COURSE LECTURERS

Recently a yellow questionnaire form was posted out to a number of Extramural students. This questionnaire was designed to collect part of the data for my M.A. thesis which is concerned with the growth and distribution of Extramural studies in New Zealand.

As is the case with any postal questionnaire, people need reminding to return them.

Because a number of the people involved in my random sample should be present at the current vacation courses, I wonder if you would be kind enough to draw to the attention of the students in your class the fact that if they DID receive a yellow form, BUT have NOT returned it, then there is an opportunity for them to do so while they are here on Campus. Spare forms are available on request at any one of the following places: -

1. EXTRAMURAL OFFICE
2. MAIN LIBRARY - ENQUIRIES DESK
3. GEOGRAPHY MAP LIBRARY - GEOGRAPHY LAB BLOCK.

If students do fill the questionnaire in while at Massey this week, IT IS ESSENTIAL that they WRITE THEIR NAME AND PLACE OF RESIDENCE at the top of the form so that it can be checked off against the coding system on the original form.

Only those students who originally received the yellow questionnaire in the last Extramural Newsletter are requested to complete the form in the manner outlined above.

Completed forms may be left at the Extramural Office or at the Map Library, Geography Lab Block.

MANY THANKS FOR YOUR COOPERATION.

NGAIRE HUNT
Masterate Student

APPENDIX C-4

MASSEY UNIVERSITY: Department of Geography

29.8.79

Dear Extramural Student,

Enclosed with the July newsletter you received a questionnaire from me as part of a survey I am undertaking on the diffusion of extramural studies in New Zealand. So far I have not heard back from you.

I realise that you are probably very busy. For many of you it was the 'end of term' not only in your daily job but also with assignments. The questionnaire, however, is very easily completed. You may, in fact, wonder how your contribution can be of use. I assure you that every questionnaire is needed for it is the total picture which is so important to my thesis.

Another questionnaire is included in case you have mislaid the original.

I look forward to hearing from you.

Yours sincerely,

Miss Ngaire Hunt

APPENDIX D QUESTIONNAIRE TO ALL AREA CONVENORS

MASSEY UNIVERSITY: Department of Geography

13 September 1979

Dear Area Convenor

You will no doubt be aware of the questionnaire dealing with the subject of growth and diffusion of extramural studies which has been distributed to a random sample of our students over the last two months.

Certain questions relating to interaction of students I purposely omitted from this questionnaire as I felt that they could better be answered by you. I would appreciate it if you could answer the enclosed questionnaire and send it back as soon as possible. As there are only 20 area convenors responses from all are needed if I am to make valid statements relating to accessibility factors and general interaction of students.

I look forward to hearing from you.

Yours sincerely
Ngaire Hunt
(M.A. Geography Student)

AREA CONVENORS

1. What would be the approximate radius in kilometres from which students travel to attend an area meeting?

2. Do you feel that all students in the area have the opportunity to attend area meetings? _____
3. If you answered "no" to question 2, which group/groups of students do you feel are disadvantaged? _____

4. Do you hold regular meetings of a general nature for all students in your area? _____
5. How many meetings do you hold a term? _____
6. What would be the average attendance at one of these meetings? _____
7. Where do you hold the meetings? e.g. the H.B. Community College. _____
8. Do you feel that this meeting place is the most accessibly situated for the majority of students? _____
9. What time of the day and on what day of the week are the meetings generally held? _____
10. Are the meetings which cater for all students purely of a social nature or are they also work oriented? _____
11. Has your area had a visit from the Director of Extramural Studies or representatives this year? _____
12. If "yes", what sort of attendance was there? _____
13. Which students, in terms of distance, were absent from the meeting? _____
14. Did students from outside your area attend? _____

25. Do you know of any extramural students who have moved into your area during this year and if so have they made contact with the area group? _____
26. In which subjects do students meet on a regular basis in your area? _____
27. Do they use an official meeting place e.g. the Community College, or do they meet in peoples homes on a more localised basis? _____
28. Have you any other general comments to add? _____

29. Please give your name and area. _____

Please return the questionnaire to:

Extramural Research Project
Department of Geography
Massey University
Palmerston North

APPENDIX E AREA CODES

Area Code	Area Name	Area Composition ^a
1	Northland	1-4
2	North Auckland	5-7, Whangarei
3	Auckland	8-11, Auckland
4	Waikato	12-15, 18, 21-22, Hamilton, Tokoroa
5	Coromandel	19-20
6	Bay of Plenty	23-24, 26-27, Tauranga, Rotorua, Whakatane
7	Taupo	25, Taupo
8	King Country	16-17
9	Taranaki	37-45, New Plymouth
10	Wanganui	46-49, Wanganui
11	Manawatu	50-55, Feilding, Palm- erston North, Levin
12	Wellington	56, Kapiti, Wellington
13	East Coast	28-31, Gisborne
14	Hawkes Bay	32-36, Napier, Hastings
15	Wairarapa	57-62, Masterton
16	Nelson	63-67, Blenheim, Nelson
17	West Coast	68-71
18	North Canterbury	72-85, Christchurch
19	South Canterbury	86-89, Ashburton, Timaru
20	Otago	90-99, Oamaru, Dunedin
21	Southland	100-103, Invercargill

Note (a) Numbers refer to Counties (Fig 2-3)

APPENDIX F AREAL DISTRIBUTION OF SUBJECT ENROL-
MENTS FOR 1979

The following table shows how the various subjects not investigated in the main data set are distributed throughout New Zealand. The table must not be considered as definitive --rather it uses information supplied in the questionnaire and as such gives a generalised picture. What it does do is to show, within limits, areas where subjects are not represented in 1979.

	Subject Codes
Northland	34, 46, 60, 75, 76
North Auckland	12, 35, 46, 58, 60, 75, 76, 77
Auckland	12, 14*, 20, 22, 23, 24, 34, 35, 41, 46, 56, 58, 40, 62, 68, 75, 76, 77, 99
Waikato	22, 34, 46, 58, 60, 68, 75, 76, 77, 99
Coromandel	34, 60, 62, 75, 76, 77
Bay of Plenty	20, 22, 34, 41, 46, 58, 60, 62, 68, 75, 76, 77
Taupo	20, 41, 46, 75, 76, 77
King Country	22, 23, 60, 76
Taranaki	12, 14, 34, 46, 58, 60, 68, 75, 76, 77
Wanganui	23, 34, 35, 46, 58, 60, 75, 76, 77, 99
Manawatu	14, 22, 34, 58, 60, 68, 75, 76, 77, 79
Wellington	12, 14, 22, 23, 34, 35, 41, 46, 56, 58, 60, 62, 68, 75, 76, 77, 99
East Coast	14, 23, 34, 46, 60, 68, 75, 76, 77, 99
Hawkes Bay	12, 14, 22, 24, 34, 35, 41, 46, 58, 60, 62, 68, 75, 76, 77, 99
Wairarapa	14, 34, 46, 60, 62, 68, 76, 77
Nelson/Marlborough	14, 22, 35, 41, 46, 62, 68, 75, 76, 77, 99
West Coast	14, 20, 34, 35, 60, 75, 76, 77

North Canterbury	14, 22, 34, 46, 58, 60, 68, 75, 76, 77
South Canterbury	14, 34, 35, 46, 58, 60, 62, 68, 75, 76, 77
Otago	14, 34, 46, 58, 60, 75, 76, 77, 99
Southland	14, 22, 23, 24, 34, 58, 60, 68, 75, 76, 77, 99

Subject Codes:

- 12 Agricultural Economics and Farm Management
- 14* Business Studies - papers included here relate to Diploma subjects and were not classified with the main data set (Appendix B).
- 20 and 99 Botany and Zoology
- 22-24 Chemistry, Biochemistry and Biophysics
- 34 Philosophy
- 35 Religious Studies
- 41 Food Technology
- 46 Social Anthropology and Maori Studies
- 56 Marketing
- 58 Computer Science
- 60 Mathematics and Statistics
- 62 Microbiology and Genetics
- 68 Nursing Studies
- 75 Psychology
- 76 Sociology
- 77 Economics

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