

THE INTEREST PATTERNS

OF A GROUP

OF

TASMANIAN ADOLESCENTS

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SUMMARY.

The purpose of this investigation was to make a study of the interests of a group of Tasmanian secondary school pupils in the early stages of their transition from childhood to adulthood. The information was obtained by means of an Interests Questionnaire, the Bell Adjustment Inventory, and the Otis Intelligence Test.

The children studied were the boys and girls in the age ranges 12.9 to 13.3 years and 14.9 to 15.3 years attending four Hobart state secondary co-educational schools.

A study of the children's interests was made in relation to certain areas of their activities such as their prescribed school studies, and to certain aspects of their development such as their social maturity. Interest patterns for various smaller groups into which the group of children was divided were described and compared.

The children indicated their interests by preference ratings. The frequency and the rank order of these ratings were considered, and preference indices calculated.

The researches of other investigators indicate that adolescent interests are dependent on, and limited by, certain major factors such as sex, physiological development, age, intelligence, environment, and socio-economic status. The influence of these factors, and of personality adjustment on the interests of the Tasmanian group was considered.

(ii)

It appeared that of all the factors, socio-economic status and personality adjustment had the least noticeable effect on interest patterns.

I n t r o d u c t i o n .

. The wish to conduct such an investigation was born of years of contact with Tasmanian children of all ages, first as a teacher and later as a psychologist.

During those years successive groups of children again and again exhibited similar patterns of activities and interests. This persistent recurrence of behaviour patterns provoked the question: "What interests, activities and stages of development belong together in children of this environment?" Numerous studies of children and adolescents in other countries, especially in America, have enabled psychologists to build up fairly complete pictures of the typical development of individuals in their culture, and to summarise the behaviour, interests and attitudes characteristic of the various stages of development from infancy to maturity. But little study on similar lines has been made of children of our own country and, in particular, of the children of this small and rather isolated State.

Interests are basic features in human behaviour and a knowledge of children's interests is basic in planning effective educational programmes. It seems advisable therefore to know what interests are likely to be expressed in the behaviour of groups of individuals whom we are endeavouring to educate.

Because of the differences between our own and other environments in respect of such aspects as culture and traditions, systems of education, and social codes to which children are expected and trained to conform, it seemed possible that there might also be corresponding differences in childhood and adolescent interests, activities and attitudes.

This investigation is therefore an attempt to find what interest patterns are exhibited by selected groups of Tasmanian adolescents, and to see if these are, to any degree, comparable with those reported in other studies.

CHAPTER IAim of the Study

The general aim of this study is to discover the interests and activities of groups of thirteen-year-old and fifteen-year-old children taken from four Hobart State secondary schools and to differentiate and to compare these interests and activities according to -

- (a) Age
- (b) Sex
- (c) Type of school attended
- (d) Intelligence
- (e) Socio-economic status
- (f) Personality adjustment

In addition it is hoped that the study may give answers - or at least pointers in the direction of possible answers - to several specific questions. Of these questions some were provoked by the findings of other studies and some arose from opinions held by people working amongst children, particularly from opinions expressed by secondary school teachers in this State.

Chief of these questions are:-

- (1) Are going to the movies, reading comics and listening to the radio activities which make strong appeal to adolescents, and do adolescents consider that they frequently participate in these activities?
- (2) Do adolescents of either sex consider that they often

- indulge in daydreaming?
- (3) Is there any noticeable trend in preference from participation in sport to spectator sport in early adolescence?
 - (4) Do girls in middle adolescence more than boys of the same age, prefer sedentary leisure-time occupations?
 - (5) Do girls lose their interest in team games at an earlier age than boys?
 - (6) When does the 'collecting mania' begin to decline?

These questions are treated incidentally in the course of the study and no attempt is made to assess their exact importance.

Definitions

For the purpose of this study we have defined 'interests' as those situations to which an individual gives his attention, or those things which he prefers to do, without apparent compulsion, or, if choice is restricted to a limited field, those which he selects in preference to others.

The term 'adolescence' is used broadly to cover the period of transition from childhood to adulthood when physical, emotional, social and mental maturity are being attained. Maturity in one or more of these aspects may be more apparent and advanced than in others.

The term 'child' is applied loosely to those individuals attending day-school.

CHAPTER II

Survey of Previous Studies

The review of some previous studies which follows may be of help in showing which aspects seem to have proved most important, and what emphasis ought to be given to them in this study.

A. Interests and Chronological Age:

Opinion as to whether there is much value in, or justification for, relating interests to chronological age has differed widely. Lehman and Witty (1927a, 1927b, 1930) concluded first that attempts to differentiate certain chronological age periods according to differences shown in the diversity of play activities seemed unjustifiable, and secondly, that there was an enormous overlapping in play interests for individuals of the same age but of different sex or different intelligence levels. Stone and Barker (1937, 1939) found that significant and characteristic changes in interests and preferred activities of girls paralleled the changes associated with sexual maturation, and that degree of pubescence was more highly correlated with interest patterns than was chronological age. Sollenberger (1940) found a higher correlation between maturity of interests and sex hormone activity than between maturity of interests and chronological age.

But Dimock (1937) searching for an association between stages of pubescence and changes in play interests found no factual grounds for assuming any important association between puberty and play behaviour. He decided that pubescence had a negligible role in determining the play interests of adolescent boys and that changes in participation in activities during adolescent years were associated with age rather than pubescence.

B. Interests and Sex:

Terman (1925) found the educational interests of gifted boys and girls to be sufficiently different as to make it impossible to combine them for any practical use. Lehman and Witty's (1927c) studies revealed considerable similarity in the activities of bright boys and girls. Symonds (1937) found sex differences in interests present from birth but accentuated at adolescence; the greatest sex differences were found in interest in personal appearance. James and Moore (1940) reported an increasing tendency for the recreational interests of the two sexes to become more alike between the ages of twelve and sixteen. Jordan (1928), Mitchell, Sullenger (1930), Stolz (1937) report sex differences in specialised interests such as reading, movies and dancing.

C. Interests and Intelligence:

MacKaye (1927) concluded that adolescents of inferior intelligence were more fixed and stable in their interests than adolescents of higher intelligence. Lehman and Wilkerson (1928) reported that children of superior mental

ability have as many play interests as those of lower ability. Lehman and Witty (1927c) found differences between the types of interests and activities preferred by children of superior intelligence and those preferred by children of average intelligence. Boynton (1941) and Lewis and McGehee (1940) reported an association between specific hobbies and superior intelligence.

D. Interests and Socio-economic Status:

Symonds (1936) reported greater interest in social skills amongst city adolescents than amongst rural adolescents. Dimock (1937) found that boys from 'better' homes showed a tendency to participate in more social activities than those from 'poorer' homes.

An examination of this summary suggests that though opinions differ as to the importance of the associations between interests and these various factors, there is general agreement that the factors do influence patterns of activities and interests.

CHAPTER IVMaterials, Technique, Procedure(1) Materials

The data for this study was secured from three main sources; an Interests Questionnaire, the Bell Adjustment Inventory and the Otis Intelligence Test.

A. The Interests Questionnaire - (a) Advantages and Disadvantages

The Questionnaire was constructed especially for this investigation since no existing interests inventory covered the entire range of aspects we wished to study, nor was directly applicable to individuals in this particular environment.

In spite of the many objections that may be made to the questionnaire method of getting data, it was used in preference to interviews for several reasons.

First the method was impersonal and gave the student privacy. The children had opportunities to answer the Questionnaire at school without the supervision of their teachers, or privately at home. At no time were the questionnaires open to the scrutiny of the teachers. Such privacy was considered essential in order to avoid reflection of adult opinions, through either interference from adults, particularly the parents, or fear of incurring adult criticism and displeasure, particularly from the teachers. For the same reasons the lack of direct personal contact between investigator and subject seemed advantageous.

Secondly, since the students were compelled neither to complete the questionnaire nor hand it in, participation became voluntary. It was probable that some children would not wish to participate because they regarded the investigation as an intrusion on their affairs and were resentful; others might be fearful of giving answers that seemed foolish, and others would be definitely disinterested. Any of these attitudes was likely to produce falsified answers, and so by keeping participation voluntary, it was hoped to eliminate much that was not true.

Thirdly, the questionnaire enabled the study to be made with a much larger number of subjects than would have been possible, because of time limitations and disrupting of school programmes, with the interview method.

The disadvantages of the questionnaire are fairly obvious. Items selected by adults who have carefully observed adolescent and child activities are nevertheless likely to be less accurate and complete than if the interests were reported by the children themselves. The adult may overlook certain activities of considerable importance and over-emphasise others. Where this did occur in this questionnaire will be pointed out later. Then, too, where the subject is asked to rate preferences in a questionnaire, the results are likely to be to some extent equivocal, as Wall (1948) points out, "since the information asked for is in some degree subjective, and since we have as yet no adequate means of knowing

how the interest shown by one individual differs in emotional intensity from that displayed by another." There are also individual differences in the way in which descriptive terms are interpreted or instructions read and followed that the investigator cannot assess. But similar differences are likely to occur in interviews. So that though the questionnaire method cannot be expected to produce exact results, particularly where it requires preference ratings; its disadvantages do not seem to outweigh its advantages for this particular investigation.

(b) Description.

The questions were built round the content of the school curricula and the activities within the experience, knowledge and culture pattern of the children. For example, activities like ski-ing and yachting, though not likely to be part of the actual experience of many of the children in the group studied, were included because they are familiar to most of them by nature of the geographical setting of the city in which the children lived and because of the popularity of those activities with the adult section of the community. Film strips have given familiarity with other activities which are just finding their way into our society e.g. baseball. Similarly questions in other sections, e.g. Social and Heterosexual Interests, were made applicable to the Tasmanian way of life.

(c) Plan of the Questionnaire.

The Questionnaire was divided into seven sections:-

I Academic, II Sport, III Reading, IV Social, V Heterosexual, VI Personal, VII Actual Participation.

In more detail -

I Academic: (i) School Subjects: Although all the children answering the Questionnaire were attending State Schools, because of differences in details of curricula and choice of subjects, they had not all studied the same subjects. So subjects were "typed" into seven groups each group having a common or key quality. The child was asked to make a preference rating of the types of subjects. The idea was to find the direction or bias of his interests rather than his interest in specific subjects. The latter might be unduly influenced by the personality of the subject teacher, or the child might be at a disadvantage in selecting specific subjects because of the limitations of the particular course of subjects open to him at his particular school.

(ii) Clubs: School curricula in Tasmania frequently require a child to participate in activities neither strictly academic nor vocational but supposed to have some relation to his hobbies. His choice may be restricted to those which school usage has established as the children's preferred interests e.g. stamp collecting, model aeroplane clubs, knitting groups, or sometimes it may be broadened at the demand of the children or because of the changing needs of life, e.g. Cadet Corps.

By "typing" Club activities we may be able to gauge what

sorts of group activity the 13 year old and the 15 year old child would prefer, if he had to participate. Left to his own volition he may, in real life, take part in no group activity; if forced to choose he may accept the activity nearest at hand. Here, however, he is asked to make a theoretical choice only. Since he has the right to refuse to state his choice or to add to the list if he wishes, it seems reasonable to suppose that he will be most likely to select activities which come nearest to the trends of his interests.

II Sport: The sports listed are those which the children are likely to know best through experience or through media such as the cinema and books. Special individual interests are catered for by allowing the child to add the name of any other sport which appeals to him. In the same section a list of activities more conveniently classified as hobbies was included. These are activities of a different calibre from sport - generally less highly organised, less competitive, and, with one or two exceptions, requiring less maintained physical exertion.

III Reading: The list of reading choices closely followed that used by Hildreth (1933). The second list was designed to give some indication of the strength of appeal reading has in relation to other types of leisure activities.

IV Social and V Heterosexual: These sections were built up round the half dozen most commonly accepted social activities for adolescents in the particular age groups being studied, viz: Guides and Scouts, Socials, Dances and Balls, visiting friends, picnicking, and going out in groups and gangs.

Although it was patterned on American Questionnaires, many situations used in these Questionnaires - e.g. Stone and Barker's (1939) - were felt to be inappropriate for children in Tasmania. In our society most schools and many parents object strongly to children indulging in dating, frequent parties, dances, balls or night entertainments, the use of cosmetics, flashy and unconventional dressing, before the end of their school life at approximately the age of 16 years. The Questionnaire was, therefore, modified accordingly.

VI Personal: This section was suggested originally by Stone and Barker's (1939) Questionnaire but did not follow it. It is divided into two parts, one for girls and one for boys, with questions comparable as far as possible.

VII Actual Participation: Here the child stated the six activities he most frequently indulged in, so that it was possible to compare what the child thinks he would prefer to do with what he actually does.

B. The Bell Adjustment Inventory.

The Bell Adjustment Inventory was used to assess the relative adjustment of the individual in relation to the rest of the group. It was realised the the Inventory was neither a complete nor a sufficiently exact measure of adjustment and that one of the projective tests would be more likely to give more information as to the dynamics of personality functioning. But for practical reasons it appeared that a technique providing strict criteria and permitting a direct numerical treatment of results was more useful.

The Inventory permits four separate measures of personal and social adjustment - viz. - home, health, social, and emotional - as well as a total 'composite score'. It was the social, emotional and composite scores which were expected to be of most use in the study. Although Bell's measures are normed for High School students who would be in some ways comparable with the group of Tasmanian children, it was, at the same time, obvious that the two groups would be likely to differ considerably owing to differences in such factors as the culture, economy, education, and geographical situation of their countries. This necessitated the establishment of new norms for the Tasmanian children.

C. The Otis Intelligence Test.

Otis Higher Form C was used. It was chosen because it is a group test providing a quick and convenient way of assessing intelligence levels. More weight was attached to the ranking on intelligence obtained by the individuals in the group than to the absolute values of their intelligence quotients.

(2) Procedure.

All the intelligence testing was done in the selected schools by psychologists who then submitted the Questionnaire and the Adjustment Inventory to the children. No time limit was placed on the Questionnaire and the Inventory but the children were urged to do the Inventory as rapidly as possible in order to get their spontaneous reactions.

Sufficient time was given to enable them to finish the Questionnaire at school, but they could, if they wished, complete it in their own time, the only provision being that the answers should indicate their own unaided choices. Since the completion of the investigation materials was voluntary, there were a few children in the groups who ultimately did not participate in the investigation.

The material was submitted to the various groups as close in time as the organisations of their schools permitted, but in actual fact this required a period of time from May until July for the the material to be completed by all groups. It was desirable to keep this period brief so that variation in interest patterns arising from seasonal changes of activities would not be too marked. On the other hand it must be remembered that had the Questionnaire been given at a different season of the year, there might have been corresponding differences in the patterns of the findings.

(3) Techniques.

A. The Questionnaire:

Where there were lists permitting a range of choice the children were asked to rate their choices 1,2,3 and so on in order of preference. Only the first three preferences were taken into consideration when preference indices were being calculated. This decision was based on the fact that many children did not attempt to make more than three selections; it was also in accordance with the number of choices used by Dimock (1937) for computing a popularity index for play activities.

A value of three points was assigned to each first choice, two points to each second choice and one point to each third choice. The total number of points for each interest or activity was then commuted into its corresponding value on a hundred point scale, that is, to its percentage of the possible score had every subject ranked it first. An activity receiving no first, second or third choices would have an index of 0. This figure then provided a rough index of the relative preference for that activity shown by the group.

The indices permitted both the establishment of preference scales for various groups of students, e.g. grouped according to sex or level of intelligence, and the comparison of relative strength of choices for specific items within the range for any one group.

W.D. Wall (1948) who used this technique in assessing the newspaper reading preferences of adolescents and adults points out that -

"this method of obtaining a group index is open to objections both logical and statistical, especially if we seek to apply the indices so obtained to individuals; none-the-less, it does indicate central tendencies within each group and seems to be as accurate as the nature of the data itself warrants."

Where comparisons were to be made between the choices of independent groups, tests of significance were

made by using the Chi-square test of homogeneity for differences in the frequencies of the choices, and the formula for "t" for differences in the mean rankings or values of the choices.

In the section devoted to social interests the scoring technique was different. The aim here was not to find which social activities were preferred to others but the strength of the individual's interest in social situations in relation to the rest of his group. According to the direction of his choice - towards the social or towards the a-social situation, so the subject scored or failed to score on the social scale. Higher scores indicated greater interest in social situations. To cater for those children who for some reason had been debarred from any experience of the situations presented^{an} alternative form of question was given, e.g. "If you dont would you like?" and this was scored instead of the original question.

A similar method of scoring was used for the sections on personal and heterosexual interests.

B. The Otis Intelligence Test:

Using the intelligence quotients derived from the Otis Intelligence Test, the students were divided into sub-groups according to their level of intelligence for certain sections of the study. It was intended at first to use the following five point scale derived from the fifteen point scale used by recognised research bodies in Australia:-

Rating	I.Q.
A	123 and above
B	108 to 122
C	93 to 107
D	78 to 92
E	77 and less

but since no subjects for the investigation came into classification E owing to the segregation of children of very inferior intelligence into Welfare Schools or their retardation in Primary Schools, and only 7% of the total group into classification A, divisions of the students was reduced further to only three groups:-

Rating	Range of I.Q.
Above average:)A)and)B	108 and above
Average: C	93 to 107
Below average:)D)and)E	92 and below

C. The Bell Adjustment Inventory:

Distributions of scores for the separate and combined measures were compared with the expected distributions for normal curves by the Chi-square test for goodness of fit.

CHAPTER IV.

Description of the Groups Investigated.

The present sample was selected in the following way:- The Questionnaire, Inventory and Otis Test were submitted to all the pupils between the ages of 12.9 to 13.3 and 14.9 to 15.3 attending the four following state secondary schools in Hobart - Hobart High, Elizabeth St. Modern, Albura Street Modern, Robert Cosgrove Modern. The schools chosen were those which are co-educational . All social classes were likely to be represented in the groups since state secondary school enrolments are drawn from all classes in the community.

Apart from differences in socio-economic environment of the individuals they had backgrounds that were comparable in that all were attending schools in the same city organised, staffed and supervised by the State.

The two age groups chosen were selected because although age is not perfectly correlated with maturity, in general terms $12\frac{1}{2}$ to $13\frac{1}{2}$ marks approximately the beginning of adolescence, while the choice of $14\frac{1}{2}$ to $15\frac{1}{2}$ provided a group of individuals likely to be in a more advanced stage of adolescence.

In addition $12\frac{1}{2}$ to $13\frac{1}{2}$ is the usual age of change from primary to secondary education and the age at which educational and social recognition is made of approaching maturity.

Age 15, in actual practice is frequently the final year of Modern School and, in the High School, marks the transition from the junior to the senior school.

The sample consisted of:

Analysis of numbers of students answering Questionnaire and Intelligence Test.

Age	Sex	Type of School	No.	Total F	Total M
13	F	High School	28	51	
"	F	Modern "	23		
"	M	High "	18		45
"	M	Modern "	27		
15	F	High School	46	91	
"	F	Modern "	45		
"	M	High "	30		81
"	M	Modern "	51		

Analysis of numbers of students answering the Bell Adjustment Inventory.

Age	Sex	Type of School	No.	Total F.	Total M
13	F	High School	22	50	
"	F	Modern "	28		
"	M	High "	18		51
"	M	Modern "	33		
15	F	High School	28	74	
"	F	Modern "	48		
"	M	High "	30		80
"	M	Modern "	50		

Analysis of numbers of students according to Socio-economic Status.

Status	Age 13			Age 15			Grand Total
	Female	Male	Total	Female	Male	Total	
1. Professional	1	1	2	4	5	9	11
2. Semi-Professional & higher business, business & clerical.	10	10	20	11	15	26	46
3. Skilled labour	12	16	28	19	16	35	63
4. Semi-skilled labour	5	6	11	7	17	24	35
5. Unskilled labour	6	3	9	11	3	14	23

In strictly statistical terms, the present sample does not give the assurance of being representative of the state population for these age groups. However, the groups concerned are drawn from schools which have -

1. an enrolment drawn from similar socio-economic groups
2. similar or identical curricula and teaching methods
3. interchangeable or interchanged staffs of teachers who have been trained by and in the same method and supervised by the same education officers.

Accordingly it would seem permissible to draw from these data certain probable conclusions regarding Tasmanian adolescents educated under like circumstances.

On the other hand where other things are equal but the socio-economic background is different, e.g. in rural areas, the same general conclusions may not seem to be justified without some further investigation.

The failure of some eight per cent of the children in the groups investigated to complete all the material submitted no doubt also affected the results somewhat. However trends and not absolute measures of interests were being sought. The failure of these few does not seem likely to make such major differences as to invalidate the probability of the conclusions which are drawn.

Note: The final totals of the Tables are not identical since not every child completed each section or item of the material submitted to him.

CHAPTER VRESULTS

The data of the investigation are analysed with regard to certain factors or groups of factors. Frequency of choice, preference indices based on the strength of choice, rank order of preference are compared; the results of tests of significance for differences in choice are indicated (see 'Techniques', Chapter IV.)

Two basic differences divide the group from the start, viz. sex and age. But by nature of the sources of the sample a third factor, the type of school attended, is immediately introduced. Although, as stated in Chapter IV, all students are drawn from schools having similar or identical curricula and teaching methods, nevertheless there is a certain difference between High and Modern Schools. It is essentially a difference in where the emphasis is placed in teaching. The High School aims to give a wide cultural background for living, the Modern School emphasises rather the usefulness of the subjects taught. Therefore, this last factor is likely to be of particular significance for certain sections of the Questionnaire, such as Section I. So starting from a two-fold classification, i.e. according to age and sex, the results may be further analysed according to a three-fold classification of the group - age, sex and school. Intelligence may be more important than school training in some sections such as that devoted to Reading Interests. Where this is probable the classification used is age-sex-level-of-intelligence.

Analyses of results are also made for certain areas of the Questionnaire on the basis of, first, the personality adjustment, and secondly, the socio-economic status of certain groups of students.

These were attempts to see if -

(a) there were any noticeable differences between the interests of the children of average personality adjustment and those who rank as poorly adjusted in relation to the rest of their group.

(b) there is any noticeable relationship between patterns of preferred interests and socio-economic status of the home.

Concisely the findings of the study are as follows:

(1) Academic Interests (Questionnaire, Part I):

(a) School Subjects :-

TABLE I

PREFERENCE INDICES FOR SCHOOL SUBJECTS

FOR HIGH AND MODERN SCHOOL BOYS 13 AND 15 YEARS OF AGE

Subject Type	Preference Index			
	High School		Modern School	
	At 13 (N-18)	At 15 (N-30)	At 13 (N-21)	At 15 (N-31)
(a)	44 (1)	27 (5)	25 (4)	37 (3)
(b)	20 (5)	39 (1)	30 (3)	19 (4)
(c)	43 (2)	38 (2)	62 (1)	37 (2)
(d)	24 (4)	32 (4)	46 (2)	61 (1)
(e)	37 (3)	22 (3)	11	19 (4)
(f)	15	35	14	7
(g)	9	8	3	14

Figures in brackets indicate the rank orders of preference for items.

At age 13. Both Modern and High School boys have a major interest in subject type (c), but otherwise their choices diverge, High School boys preferring subjects involving abstract problem-solving (a), and self-expression (c), and Modern School boys preferring concrete problem-solving (b) and practical tasks (d).

At age 15. The interest of Modern School boys is focussed on practical tasks with a subsidiary interest in mathematics and vocational training. The interest of High School boys is spread more evenly over a wider range of subject types, science, literary, and practical subjects share priority of choice, there being no statistically significant difference, as indicated by the statistics Chi-square and 't', in the choice ranking or choice frequency of these three types.

In General: Modern School boys prefer constructive jobs involving manual dexterity, or subjects concerned with vocational training. High School Boys' choices are more diverse.

TABLE II.

PREFERENCE INDICES FOR SCHOOL SUBJECTS
FOR HIGH AND MODERN SCHOOL GIRLS 13 AND 15 YEARS OF AGE.

Subject Types	Preference Index			
	High School		Modern School	
	At 13 (N-28)	At 15 (N-46)	At 13 (N-23)	At 15 (N-43)
(a)	8	17	28 ⁽⁴⁾	26 ⁽⁵⁾
(b)	6	9	17 ⁽⁵⁾	3
(c)	56 ⁽²⁾	49 ⁽²⁾	41 ⁽²⁾	36 ⁽³⁾
(d)	41 ⁽³⁾	42 ⁽³⁾	51 ⁽¹⁾	50 ⁽¹⁾
(e)	57 ⁽¹⁾	57 ⁽¹⁾	39 ⁽³⁾	41 ⁽²⁾
(f)	7	19 ⁽⁴⁾	4	9
(g)	25 ⁽⁴⁾	7	6	30 ⁽⁴⁾

Figures in brackets indicate the rank orders
of preference for items.

At age 13. The interests of both High and Modern School girls are rather narrowly confined. They prefer subjects^{concerned} with the studies of societies (c), with self-expression (e), and with practical tasks. Modern School girls show significantly higher preference for mathematics than High School girls.

At age 15. The pattern is largely a repetition of the 13-year pattern with the exception of the increased interest taken by the Modern School girls in vocational training.

Comparison of Sexes:

Subjects dealing with practical tasks are favoured by both sexes but the girls' preference for self-expressive subjects (e) is significantly higher than the boys'.

High School girls as compared with High School boys tend to concentrate their interests on fewer subject types and to give these higher preference ratings.

The average level of intelligence of High School students is superior to that of Modern School students, eligibility for enrolment in High Schools being determined usually by success in intelligence and achievement tests at the end of the primary school years. Nevertheless there is a certain overlapping in the two types of schools: (See Table D(i) and D(ii), Appendix). Therefore preference indices were calculated for groups according to age and level of intelligence but regardless of type of school. Table III, below, sets out these preferences for the boys.

TABLE III
PREFERENCE INDICES FOR SCHOOL SUBJECTS
FOR BOYS 13 AND 15 YEARS, CLASSIFIED ACCORDING TO
LEVEL OF INTELLIGENCE.

Subject Types	Preference Index.					
	At Age 13 Years			At Age 15 Years		
	Below Average Intelligence	Average Intelligence	Above Average Intelligence.	Below Average Intelligence.	Average Intelligence.	Above Average Intelligence.
	N = 6*	N = 19	N = 20	N = 28	N = 29	N = 24
(a)		22	40	30	44	24
(b)		22	28	16	23	43
(c)		71	43	43	37	32
(d)		42	30	68	43	39
(e)		18	28	18	13	32
(f)		4	17	6	21	25
(g)		7	7	13	16	6

* Only four gave preference ratings in this group - too small a number to justify the calculation of group indices.

At age 13. Logically, since the average-intelligence group corresponds closely with the Modern School group and the above-average group with the High School group, the preferences related to type of school follow much the same pattern as preferences related to intelligence level.

At age 15. The below-average-intelligence and the above-average-intelligence patterns correspond roughly with the Modern School and High School patterns respectively. The pattern for the average-intelligence group wavers between the two, but tends rather more to the Modern School pattern since the majority of children in the average group are Modern School pupils and their interest patterns are evidently associated more with the type of school they attend than the level of intelligence.

TABLE IV.

PREFERENCE INDICES FOR SCHOOL SUBJECTS FOR
GIRLS 13 AND 15 YEARS CLASSIFIED ACCORDING TO LEVEL OF
INTELLIGENCE.

Subject Type	Preference Index.					
	At Age 13 Years			At Age 15 Years		
	Below Average Intelligence.	Average Intelligence.	Above Average Intelligence.	Below Average Intelligence.	Average Intelligence.	Above Average Intelligence.
	N = 5*	N = 27	N = 19	N = 17	N = 36	N = 36
(a)		26	9	24	19	22
(b)		16	7	4	3	11
(c)		51	49	37	31	56
(d)		44	39	59	46	39
(e)		48	54	31	57	49
(f)		2	11	6	15	17
(g)		9	32	33	24	6

* Only three gave preference ratings in this group -- too small a number to justify the calculation of group indices.

The same repetition of patterns occurred with the girls as with the boys: see the section following Table III.

(b) School Clubs:-

TABLE V.

PREFERENCE INDICES FOR SCHOOL CLUBS
FOR HIGH AND MODERN SCHOOL BOYS 13 AND 15 YEARS OF AGE.

Type of Club	Preference Index			
	High School		Modern School	
	At Age 13	At Age 15	At Age 13	At Age 15
(a)	28 ⁽³⁾	36 ⁽³⁾	24 ⁽³⁾	26 ⁽³⁾
(b)	46 ⁽²⁾	40 ⁽²⁾	62 ⁽¹⁾	74 ⁽¹⁾
(c)	17	15	6	8
(d)	11	7	15 ⁽⁴⁾	17 ⁽⁴⁾
(e)	13	6	15 ⁽⁴⁾	10
(f)	20 ⁽⁴⁾	18 ⁽⁵⁾	9	11 ⁽⁵⁾
(g)	19 ⁽⁵⁾	20 ⁽⁴⁾	8	5
(h)	47 ⁽¹⁾	54 ⁽¹⁾	39 ⁽²⁾	40 ⁽²⁾

Figures in brackets indicate rank-
orders of preference for items

At age 13. Physical activities, constructing things, and collecting are the favoured types of club activity. Modern School preferences differ significantly from High School preferences in one activity only, type (b), constructing things ($t = 2.746$, $P < .01$, d.f. = 38).

At age 15. The rank order of preferences is the same but the differences between the mean values of several of the choices for the two school groups are statistically significant.

High School boys give higher mean choice than Modern School boys to clubs concerned with collecting ($t = 3.353$, $P < .01$, d.f. = 72), physical activity ($t = 6.396$, $P < .01$, d.f. = 72), and natural science ($t = 2.268$, $P < .05$, d.f. = 72).

Modern School boys give higher mean choice to constructing things ($t = 7.90$, $P < .01$, d.f. = 72), and to self-expressive activities ($t = 2.26$, $P < .05$, d.f. = 72).

TABLE VI

PREFERENCE INDICES FOR SCHOOL CLUBS
FOR HIGH AND MODERN SCHOOL GIRLS 13 AND 15 YEARS OF AGE.

Type of Club	Preference Index			
	High School		Modern School	
	At Age 13	At Age 15	At Age 13	At Age 15
(a)	19	15 ⁽⁴⁾	24 ⁽⁵⁾	35 ⁽³⁾
(b)	29 ⁽⁴⁾	7	25 ⁽⁴⁾	22 ⁽⁴⁾
(c)	2	10	0	3
(d)	20	15 ⁽⁴⁾	4	12
(e)	30 ⁽³⁾	34 ⁽³⁾	42 ⁽³⁾	19 ⁽⁵⁾
(f)	50 ⁽¹⁾	56 ⁽¹⁾	45 ⁽²⁾	38 ⁽²⁾
(g)	5	5	2	5
(h)	45 ⁽²⁾	56 ⁽¹⁾	48 ⁽¹⁾	66 ⁽¹⁾

Figures in brackets indicate the rank orders of preference for items.

At age 13. The patterns for Modern and High School girls are very similar -- types (h), (f), (e) and (b) have

high preference indices. High School girls give a significantly higher rating to self-expressive activities than do Modern School girls; Modern School girls rate enjoyment of the arts higher than the High School girls.

At age 15. There is little variation in the rank order of preference at fifteen as compared with that at thirteen. The tendency is rather for the indices of the preferred activities to be more equable within the group for each type of school.

Differences in the mean values of choices between the two school groups are statistically significant at the one per cent level for types (a), (b) and (e). Modern School girls give higher choice to (a) and (b) and High School girls to (e).

(2) Play Interests. (Questionnaire, Parts II & III):

Since these sections include some groups of activities not intimately associated with the classroom and not likely to be influenced substantially by the type of school the child is attending, it has not been thought useful to maintain throughout discrimination between the two distinct school populations. Previous studies have suggested that for certain interests division of the group on the basis of intelligence level is likely to be more profitable and so classification according to age-sex-intelligence has frequently been used.

(a) Sports: (Boys)

Indices are indicative of preference for, not participation in, various sports. Of a list of thirty-six suggested sports, together with others added by the child if he wished, only fourteen received sufficient first, second, and third choices to give them an index of more than 5 points. (See Table F(i) Appendix). Football, cricket and swimming gain markedly higher preferences than any other sports with all groups whether comparable according to age or intelligence. Some sports, e.g. basket-ball, are definitely favoured by the brighter children, others such as tennis seem to be associated with the type of school attended.

(Girls)

Only ten sports received more than a 5-point index from the girls' choices. Swimming, basket-ball, ice-skating and dancing are the first favourites.

Both boys and girls tend to prefer vigorous physical activities, though the girls' favourite sports require, on the whole, a less sustained output of physical energy. The girls' interest in team games appears to decline at an earlier age than the boys' interest.

(b) Non-sport Activities: (See Table F(ii) Appendix).

Theatre-going and Reading have the highest and most consistent appeal for all groups but there are noticeable differences otherwise in the patterns for age-sex groups. These are discussed in detail in the next chapter.

(c) Sport and Non-sport combined:

TABLE VII

PREFERENCE INDICES FOR SPORT AND NON-SPORT
ACTIVITIES FOR BOYS AND GIRLS AGED 13 AND 15 YEARS.

Interest or Activity	Preference Index			
	At Age 13		At Age 15	
	Girls	Boys	Girls	Boys
	N = 52	N = 45	N = 92	N = 77
Reading	38(2)	16(4)	29 (3)	16 (4)
Sport	42(1)	72(1)	52 (1)	75 (1)
Talking	3	0	1	0
Daydream- ing	0	0	0	0
Going to Pictures	21	24(3)	28(4)	29(3)
Dancing	27(3)	7	43(2)	9
Listening to Radio	13	13	11	6
Hobby	26(4)	43(2)	13	49(2).
Playing a Musical Instrument	22	8	17	7

Both sexes give outstanding preference to physical activities as designated by 'sport'. As major preferences at both ages, girls choose sport, reading and dancing, and the boys choose sport, hobbies and going to the pictures. There is no significant shift in the weighting and ranking of the preferences for the two age-groups of boys but there are significant differences for the girls.

Passive or sedentary activities such as talking, daydreaming and listening to the radio have relatively low or negligible appeal.

Intelligence seems to be closely associated with choice of two activities, --- reading, with both boys and girls, and theatre-going, with the girls only.

(3) Play Participation (Questionnaire, Part VII):

The children were asked to write the names of the six activities in which they most frequently participated. The following table shows the activities in which 10 per cent or more of the children said they frequently participated. The two sexes are treated separately.

See Table IX on following page.

TABLE IX

MOST FREQUENT PLAY ACTIVITIES AT AGES 13 AND 15.BOYS.

Activity	% of Boys Participating	
	At Age 13	At Age 15
Football	62	84
Swimming	52	47
Fishing	38	33
Cricket	36	59
Cycling	33	33
Softball	29	23
Billiards	24	10
Chess	24	5
Reading	24	12
Table Tennis	19	12
Athletics	17	14
Gymnastics	17	10
Card Games	14	-
Meccano	14	5
Rugby	14	-
Tennis	14	30
Basket-Ball	-	23
Ice-Skating	-	27
Yachting	-	27
Rowing	-	14

GIRLS.

Activity	% of Girls Participating	
	At Age 13	At Age 15
Swimming	65	48
Basket-Ball	58	41
Ice-Skating	35	44
Ballroom-Dancing	29	47
Reading	29	49
Softball	27	31
Cycling	23	15
Baseball	21	11
Musical Instrument	21	20
Knitting	21	25
Sewing	19	18
Tennis	19	44
Singing	19	19
Hockey	17	18
Theatre	8	19
Radio	13	18

Sport activities have conspicuous priority, Reading being the only non-sport activity with participation of more than 10% of the students. The boys show a tendency to concentrate on some three or four games but the girls are more diverse in their interests and so there is a tendency for them to spread their participation over a larger group of games. There is no great disparity between most of the preferred activities and performed activities. That is, most of the sports that these girls and boys indicate that they do play are the ones which they prefer to play. Softball appears to be an exception. Quite a high percentage of both boys and girls participate in softball but the only inclusion it has with preferred sports is as a last choice by the 15-year old girls. On the other hand there are few sports included amongst the preferred ones which score a low or nil percentage of participation. Ice-skating for the 13-year boys, and soccer for both 13- and 15-year boys are the two exceptions.

(4) Reading Interests (Questionnaire, Part II) :

The type of reading matter preferred appears to vary according to the age, sex and level of intelligence of the group. Adventure and mystery stories are popular with both boys and girls. The boys place detective stories high in rank order of preference and love stories low; the girls do the reverse. The boys show much more interest than do the girls in non-fiction reading matter. For reading interests shown in Table form see Table M (i) and M(ii), Appendix.

(5) Social, Heterosexual and Personal Interests.
(Questionnaire Parts IV, V, VI):

The mean scores for each of these three sections were compared for each of the four groups -- Boys aged 13, boys 15, girls 13, girls 15. Certain differences were found to be statistically significant:-

In social interests the girls of fifteen have a higher mean score than the boys of the same age.

In heterosexual interests the girls of fifteen have a higher mean score than any of the remaining three groups. ($P = .01$).

In personal interests the mean scores of the fifteen year olds of both sexes are higher than the means for the thirteen year olds.

For the comparison of these means see Table K, Appendix.

Scores for these three types of interests (Social, Heterosexual, and Personal) were:

- (a) correlated with levels of intelligence, using a fifteen-point scale and the results on the Otis Intelligence Test.
- (b) correlated with the scores obtained on measures of the Bell Adjustment Inventory.
- (c) intercorrelated.

The results of these correlations are shown in Table X, below. A P of .05 or less than .05 was accepted as indicating that the correlations were statistically significant.

TABLE X

GROUP	r Social Interests, Intelli- gence	P	r Hetero- sexual Interests, Intelli- gence	P	r Social, Hetero- sexual Interests	P	r Hetero- sexual, Personal Interests	P	r Social Interests, Bell (c)	P
GIRLS age 15	-.09	-	-.23	.05	+.36	.01	+.46	.01	+.21	.05
BOYS age 15	+.11	-	.09	-	+.13	-	+.32	.01	+.32	.01
GIRLS age 13	+.16	-	-.21	-	+.52	.01	+.54	.01	+.28	.05
BOYS age 13	-.33	.05	+.16	-	+.45	.01	+.16	-	+.15	-

Low but significant correlations are present for the majority of the groups between social and heterosexual interests, personal and heterosexual interests, social interests and scores on the 'c' scale (the social measure) of the Bell Adjustment Inventory.

There was no significant statistical evidence of association between the level of intelligence and the total scores on the Bell Adjustment Inventory, nor of association between scores on Social Interests or Heterosexual Interests and Total Adjustment.

(6) Socio-economic Status and Interests:

Each of the age-sex groups was divided into 5 sub-groups according to the Taussig five-grade classification of the fathers' occupational status. Comparisons were made of the preferred types of leisure interests (as listed in the Questionnaire, Part III, Q.2) of these socio-economic groups. It was found that, within each age group, socio-economic status made apparently no noteworthy difference to the types of interests preferred and the rank orders of their preference. A second comparison was made, this time of the activities in which they most frequently participated. Again, within each age-group, the same types of activity, and in most instances the same specific activities, had the highest percentage of participants from each socio-economic class.

(7) The Bell Adjustment Inventory:

The four measures of the Bell Adjustment Inventory

applied to the Tasmanian groups studied gave distributions which were markedly massed at the lower end of the scales and tailed away on the higher scores. By using the Chi-square test of goodness of fit it was found that for scales (a), (c) and (d) the upper half of the distribution (i.e. the frequencies for scores above the median value) conformed to the distribution for a normal curve. That is, scales (a), (c) and (d) provided suitable measures for differentiating between 'normal' - and 'mal' - adjustment, but yielded an undifferentiated massing of individual scores at the 'well'-adjusted end of the scales. This differentiation was sufficient for the purposes of this study.

(8) Adjustment and Interests:

A brief survey was made of the interests of children whose scores on scales (c) and (d) were regarded as being high enough to indicate maladjustment. Since the top halves of these distributions followed a normal curve, an arbitrarily chosen value of 1.7 S.D. from the mean was selected as the dividing point between normal and maladjusted scores, putting approximately five per cent of the total population studied into the 'maladjusted' group. Actual figures were : 17 students (9 boys and 8 girls) with scores of maladjustment on scale (c), and 12 students (9 girls and 3 boys) with scores of maladjustment on scale (d).

Sport preferences, activities in which they participated most often, preferred types of leisure activities, and reading interests of those with high scores on (c) were compared with those of the remaining children of the same sex. These 'maladjusted' children tended to choose the same activities and to prefer the same types of reading matter as the normally adjusted children. Similarly for those with high scores on scale (d) -- emotional adjustment -- there was little variation from the pattern for the normally adjusted children except that the former showed relatively more interest in listening to the radio.

CHAPTER VIDiscussion of Results

The results of the investigation sketched in bare outline in the preceding chapter are discussed more fully here and related to the findings of other studies briefly recapitulated in Chapter III. Although some previous studies had found pubescent development to be a more effective discriminant than was chronological age in isolating group patterns of interests, no attempt was made to determine the pubescent development of the individuals in this study. To get evidence of the degree of pubescence would have necessitated calling in the aid of medical services, which was impracticable. Secondly, the study had an educational and sociological bias rather than a physiological one, the beginnings of social maturity in the school world being marked by acceptance into the secondary school population. Nevertheless, possible effects of puberty on certain interests were not ignored.^H Thirdly, Dimock (1937) in his study of 1406 boys ranging in age from 10 to 16 confirmed the results of earlier investigators such as Crampton (1908) and Leal (1932) that puberty spreads over a wide range of chronological ages, but looked in vain for a direct association between pubescent growth and play behaviour. He compared the participation records of pre-pubescent boys with those of boys of the same age who were pubescent but found only one activity, car driving, where differences in participation appeared consistently to be associated with pubescence at the various age levels.

^H

See subsidiary study, Chapter VIII.

The gradual tendency for boys to be less versatile in their play activities as they grow older he found by statistical analysis to have little association with pubescence once the age factor was taken into account. He finally concluded that 'changes in play interests from the years twelve to fifteen may be as readily accounted for without assuming the influence of pubescence or other physiological causes as can the apparently more marked changes in the childhood or pre-pubescent period.'

Since we are not rejecting the idea that pubescence may be important particularly in the development of social interests, interest in personal appearance, and interest in certain specific sports, we will recall the findings of some other investigators that

(a) Girls of all races precede boys on the average by 12 to 20 months in pubertal development

(b) The average age for pubescence is 13.5 years for girls of U.S.A. Fifty per cent mature between 12.5 and 14.0 yrs.

(c) The average ^{age} for pubescence is 14.5 years for boys of U.S.A. Fifty per cent mature between 14.0 and 15.5 years.

(See Table L, Appendix).

On the bases of these findings, we expect our 13-year male group (made up of boys ranging from 12.9 to 13.3 years of age) to be mainly pre-pubescent, and our fifteen-year male group (age range 14.9 to 15.3 years) to be mainly pubescent with perhaps a small percentage of post-pubescent boys.

In the 13 year female group (age range 12.9 to 13.3 years) we expect to have a big proportion of pre-pubescent girls and in the 15 year female group (age range 14.9 to 15.3 years) to have a big percentage of post-pubescent girls.

Adolescent Interests.

The young teenagers' life is, for a considerable part, governed by what the adult world thinks he should know and do. His school studies are mapped out with an eye to what it will be good for him to know as a mature citizen. The non-academic activities which are offered him are usually those which adults believe he likes to do or those which it is traditional for him to do. It may be that his interests conform to this pre-arranged pattern, or it may be that they are so strong in other directions that given freedom of choice he would break away from these patterns.

If the studies of young adolescents in other countries such as the United States. give findings which are, for the most part, applicable to adolescents in this country, and if the traditional adult ideas of adolescent interests are correct, then this study may produce nothing that is not already known and accepted.

We shall consider therefore what the 13 year old and 15 year old think they would like best to do had they wide choice and the ability to do these preferred activities. Then we shall compare these preferences with what they actually do and with what adolescents elsewhere do or would like to do.

In expressing the findings as generalised statements of what a 13 year old or a 15 year old boy or girl from our selected group likes to do, we must realise that we are creating theoretical individuals. We are working on preference scales where first, second and third choices have been averaged out and many of the individual differences have been masked or lost. This is unfortunate but unavoidable in a study seeking primarily for trends of interest and behaviour rather than for precise and closely defined particularisations.

(I.) Academic Interests

1. Subjects in the School Curriculum:

If the adolescents in our group could pick and choose freely amongst their school subjects, what would they prefer to do? They gave their answers as ranked choices. It was possible from these ratings to compute a preference scale for all the 13 year old boys, all the 13 year old girls and so on (See Tables A(i) and A(ii) Appendix); but such broad treatment seemed likely to ignore or conceal too many important differences.

Although, as was stated in Chapter V, the educational backgrounds of the children were in many ways identical or comparable, yet the total group essentially comprised two distinct populations - a modern school population and a high school population. In these two types of schools the subjects of the curricula are basically the same but the detailed material of the subjects varies.

Considerable emphasis in the teaching in the Modern School falls on vocational preparation and the development of practical ability; in the High School the primary aim is to give a well-rounded cultural background. In addition the average level of intelligence of the children attending the Modern School is much lower than that of the High School students.

Therefore it seemed of more practical value to study the group divided into its two school populations, noting the similarities and differences between them, and the variations in the interest patterns of their 13 year old and 15 year old student groups.

Since the High School caters for those chiefly above average intelligence and the Modern School chiefly for those of average and dull-average intelligence (See Table D(i) and D(ii)) it seemed doubtful whether division of the group according to levels of intelligence would reveal any fresh differences in interest patterns. However, because there is some overlap between enrolment at the two types of schools at the average-intelligence level, this second division was made.

Adolescent boys and the school curriculum: If we take each of the age groups separately we find certain facts emerging. First, in both age groups further divided according to the level of intelligence (See Table III Chapter V.) we do not find for any subject-group any statistically significant difference in the frequency of first to third choices.

(The standard of significance was $P = .05$). However, if we divide the age groups according to the type of school attended, i.e. into High School and Modern School populations, we find a higher frequency in choice of subject - groups (e) by 13 year High School boys (Chi-square = 4.21, $P < .05$, d.f. = 1) in subject group (f) by 15 year old High School boys (Chi-square = 13.01, $P < .01$, d.f. = 1), and in subject group (d) by 15 year old Modern School boys (Chi-square = 4.562, $P < .05$, d.f. = 1). It is interesting to note in passing that subjects of types (e) and (f) preferred by the High School boys are verbal and those of (d) are non-verbal.

But in considering only frequency of choice we are passing over another important difference that may occur - the difference in the strength or rank order of the choice given individual items. Although comparable numbers of High School and Modern School boys may give one of their first three preferences to the same subject group, there may be a marked difference in the preference index because, say, the bulk of the High School boys selecting ^{this} subject group give it a first preference whereas the majority of the Modern School boys give it only a third preference. By means of the "t" test it was found that -

(A) High School boys give significantly higher mean choice than Modern School boys to:

- (i) Subjects of types (a), and (e) at 13 years of age
- (ii) Subjects of types (b) and (f) at 15 years of age.

(B) Modern School boys give a significantly higher mean choice than High School boys to

- (i) Subjects of types (c) and (d) at the age of 13
- (ii) Subjects of types (a) and (d) at the age of 15.

See Table C(i) Appendix

In addition to these differences between High School and Modern School patterns there are also differences between the patterns of the two age groups within the two types of schools. Not only is the Modern School boys' interest in practical work greater than that of the High School boy but at fifteen it has intensified so that the mean rank of the Modern School boys' choice for this subject group is much higher than at thirteen ($t = 4.395$, $P < .01$, $d.f. = 70$).

There is also an increase in strength of preference, at fifteen years of age as compared with thirteen years of age, that Modern School boys show for subjects of types (a) and (g). (For differences see Table B(i) Appendix) .

There seems to be quite a reasonable connection between the preferences for these three types of subjects - an interest in abstract problem work (type (a) - arithmetical calculations) associated with practical constructive tasks (type (d) - carpentry etc) and a growing desire to escape from an academic environment into the practical environment of the industrial world. The complementary attitude is shown in the lessening interest at fifteen in subject groups (b) and (c) - the verbal and science subjects.

For High School boys the changes according to age have a different pattern. Liking for subjects type (f) shows the greatest relative change, being more frequently chosen and more highly rated at fifteen than at thirteen (See Table B(ii) Appendix). . . . Type (b) is given a significantly higher rank of choice. But types (a) and (e) are much less preferred by the fifteen year olds than by the thirteens. So that amongst the High School boys the subject types which gain the higher preference with the older boys are the sciences - (b) and (f) - and those which have lower preference are the mathematical and self-expressive types - (a) and (e). The direction of the interests of the High School boys is less clearly defined than is that of the Modern School boys: they distribute their preferences more evenly over the whole range of subjects offered them. This is probably due to the nature of High School education which endeavours to give every subject an important place in the curriculum rather than to emphasise specific vocational training.

The subject types with high, and virtually identical, preference indices in the fifteen year old High School boys, viz (b), (c) and (f), include 3 of the 4 specific subjects - science, mathematics, history and English - which Book (1922) and Calvin and MacPhail (1924) found to have the highest preferences among the American High School boys. But the Modern School boys' preferences are different and do not conform to these findings. Their preferred subject types have instead some similarity with the selections made by High School boys and girls in an investigation conducted by Doane (1942) where 68% of the students

favoured courses dealing with vocational choice, training and placement.

Adolescent girls and the School curriculum:

the preferences of the girls, whether they be High School or Modern School, at both thirteen and fifteen years of age fall conspicuously on three types of subjects - the cultural (c), the practical (d), and the self expressive (e). Natural sciences and mathematics have little appeal.

The only significant difference in the frequency of choices of thirteen year old Modern School and High School girls is for subjects of type (c) (Chi-square 10.45, $P < .01$, d.f. = 1) where the High School girls' more frequent choice is an indication perhaps of a bias towards verbal subjects. At fifteen relatively more High School girls than Modern School girls give science subjects (f) one of their first three choices (Chi-square = 6.995, $P < .01$, d.f. = 1), and relatively more Modern School girls than High School girls show interest in vocational subjects (g), (Chi-square = 7.966, $P < .01$, d.f. = 1).

As with the boys, there are also significant differences between the mean rank of choice given certain subjects by High School and Modern School girls.

(A) High School girls give higher preference than Modern School girls to:

- (i) Subjects of types (c), (e) and (g) at 13 years of age.
- (ii) Subjects of types (c), (e) and (f) at 15 years of age.

(B) Modern School girls give higher preference than High School girls do to:

- (i) Subjects of types (a) and (d) at 13 years of age
- (ii) Subjects of types (a), (d) and (g) at 15 years of age.

See Table C(ii) Appendix.

A noticeable feature here is the change in interest associated with vocational subjects. The thirteen-year-old High School girls show an early flash of interest - vocational subjects rank fourth in order of preference - but the fifteen-year-old High School girls show very little interest. This may be because at the beginning of the High School course some attention is given to the question of future careers when appropriate school courses are being selected. At fifteen the intrinsic interest of the subjects and the interest in exploring the wider fields opened up by the High School courses supplant the earlier concentration on vocational subjects.

General Comments.

(1) In comparing the choices of the two sexes it is noticeable that the girls throughout have significantly higher preference indices for the Arts - type (e). It is probable that the boys feel handicapped by the physical changes of adolescence, particularly by their changing voices, and therefore tend to withdraw from oral subjects such as dramatics, singing, debating. The physical changes of the girls would not prove such a handicap to them in these subjects.

(2) Practical tasks are popular with both High School and Modern School boys and girls, though the Modern School students give such tasks significantly higher rating than the High School students. The High School students tend to rate verbal subjects more highly than Modern School students though the differences between the boys' groups are not always statistically significant.

(3) Interest shown by all the thirteen year age groups in the natural sciences is low but at fifteen it is considerably higher amongst High School students (for girls $t = 2.687$, $P < .01$, d.f. = 72; for boys $t = 3.28$, $P < .01$, d.f. = 46). This is due in part to High School organisation which provides better facilities for the study of science and more highly specialised teachers to instruct in science subjects than the Modern School organisation does.

(2) School Clubs.

(i) Boys' References (See Table V Chapter V.)

Clubs devoted to collecting, constructing and physical activity are most favoured by the boys. As one might expect from the study of preferences for school subjects, practical constructive activities are more highly favoured by the Modern School than by the High School boys. At thirteen this is the only significant difference between the choices of the two groups. (For type (b) $t = 2.746$, $P < .01$, d.f. = 38). But between the 15 year age groups more significant differences are apparent.

Modern School boys give higher preference than High School boys do to types (b) ($P=.01$), and (d) ($P=.05$); High School boys' interests are definitely stronger in Clubs concerned with collecting ($P=.01$), natural sciences ($P=.05$), and physical activity ($P=.01$), as indicated by the significantly higher mean rank of choice they give these activities. The Modern School boys' choice of (d) may well be influenced by the fact that craftwork is suggested as a medium for self-expression, and selection could then be very largely another reflection of their liking for constructing things.

For the two High School groups the interests at 13 and 15 years of age follow the same pattern, the clubs which had the most appeal at thirteen still have the most appeal at fifteen. And with the exception of (b) where interest has strengthened ($P=.01$) this is true for the Modern School boys also.

When Dimock (1937) studied the play interests of boys aged twelve to fifteen he found over this period of four years a drop of 22% in the number of boys who engaged in Making something'. The same sort of change did not occur with the Tasmanian boys. Hurlock (1949) believes that the decline may be due largely to a growing interest in 'crowd' life and that 'where the group can meet and make things together, this type of recreation continues to be popular until middle or even late adolescence.' The evidence, then, suggests the influence of a cultural factor. It appears from current literature that American society accepts a much freer expression of adolescent heterosexual interests than does Tasmanian society. Involved in the 'crowd' the American adolescent has, possibly, less time and attention to give to more

solitary creative activities. Though the young Tasmanian adolescent may want to be with the 'crowd', the normal authoritarian attitude is to encourage him to remain in the home (where he is more likely to 'make things' as a means of solitary entertainment) or to satisfy his need for companionship amongst groups of his own sex. This could account in part for the maintained interest of the Tasmanian boys in constructing things. But in addition there appears to be some association with intelligence - the lower the level of intelligence the higher the preference index for (b). (See Table E, Appendix). Possibly the duller boys' need for self-expression is satisfied by the creation of a material object whereas the brighter boys find ready expression in verbal modes also. Probably too, the duller boys accept more readily the attitudes of their schools, i.e. they are influenced by the practical bias of the Modern School.

Witty and Lehman (1930) studying children's interest in collecting placed the peak of this interest between the ages of nine and thirteen with a considerable waning after fourteen. Dimock (1937) noticed a rather earlier waning in participation but found that appeal remained fairly constant up to the age of 15. Dimock's finding more nearly describes the results given by the Tasmanian boys. At fifteen there is no significant change in the preference index for any male group though the difference in the means for High School boys of thirteen and fifteen suggests a trend towards increased interest at fifteen ($P=.07$).

In contrast to constructing things, collecting ranks highest with the boys of above-average intelligence. It is in the junior High School years that one finds the stamp-collecting

enthusiasm and this is what may be reflected in this high preference rating.

Physical activities rate higher with High School than with Modern School boys because although the boys below average in intelligence choose (h) as frequently as the boys of the average and above-average groups the value of their choices is lower (mean value for above-average group 2.4; mean value for below-average group 1.5). In addition interest in physical activities is fostered by High School organisation where sport is an integral part of the training of the child and where interest in sport is encouraged by means of intra- and inter-school matches. There is less of this 'sporting tradition' in the Modern Schools.

"Discussions, in common with arguments, are more characteristic of middle and late adolescence than of early adolescence", says Hurlock (1949). In this study interest in discussion even at fifteen, which may be regarded as bordering on middle adolescence, is very slight. Amongst High School boys where one might expect to find greater verbal fluency and an earlier consciousness of social and political problems, the index is a little higher than for the Modern School boys but just misses being different at the statistically significant 5 per cent level.

Social and heterosexual interests are usually becoming fairly apparent among boys about the second year of secondary school life and are accompanied by increased interest in school social activities such as socials and dances. It seems possible that school attitudes may again be responsible for fostering or

discouraging this interest since the preference for such activities is much higher for boys coming from the High School which provides much more encouragement of, and opportunities for, social activities than the Modern Schools. However, even with the High School boys, social activities are not so appealing that they can outdo the attraction of activities less closely allied to social and heterosexual behaviour; e.g. activities of the types (a), (b) and (h).

Natural Science as a club activity receives few first preferences but the High School boys who do choose it tend to give it a higher preference than the Modern School boys. At thirteen the difference in the mean rank of their choices just fails to be statistically significant (P falls between .05 and .10) but at fifteen the difference is significant at the 5 per cent level. This divergence of interest between the two school populations is consistent with the pattern shown for school subjects.

(ii) Girls' Preferences (See Table VI, Chapter V)

Of the eight types of clubs suggested the girls show definite preference for five, viz. (a), (b), (e), (f) and (h), but there are marked fluctuations in the pattern according to type of school, age, and level of intelligence.

At thirteen, High School girls are far more interested than Modern Schools girls are, in self-expressive activities but the Modern School girls exhibit rather higher preference for enjoyment of the arts. Otherwise their interest patterns at this age are comparable. At fifteen the Modern School girls far exceed the High School girls in interest in

collecting and constructing, but the High School girls are more keenly interested in social activities and the arts.

When the groups are divided according to levels of intelligence we find that interest in collecting and constructing is comparatively lower and in social activities higher, for the above-average groups (See Table B Appendix).

At thirteen both High and Modern School girls regard collecting with comparatively equal interest. At fifteen this interest in relation to the others has remained static for the High School girls but appears to be still increasing for the Modern School girls. However, intelligence level is the important factor here. For the average and above-average girls of both 13 and 15 years of age, the preference index is identical and its rank order almost unchanged (it ranks 5th at thirteen and 4th at fifteen). But the duller girls rate it far higher (at fifteen it is then second highest choice) and since they constitute about 44% of the 15-year Modern School group, they 'push up' the index for this group. (Because so few girls below-average in intelligence appear in the 13 year group their influence on that age group is almost negligible). The waning that Lehman and Witty found in the 'collecting mania' round about the age of fourteen years is not apparent to any noticeable degree amongst these Tasmanian girls. The higher preference given to collecting by the duller girls may be due to the less diversity of their hobby interests; they tend to concentrate on activities which demand less originality and creative ability viz.(h), (a) and (f).

Interest in constructing things has dwindled very significantly amongst the High Schools girls by the age of fifteen. With the Modern School group it is again the girls of below-average intelligence who keep up the high preference index for (b) at fifteen. (For the girls of average intelligence the index has dropped from 35 to 14). Hurlock (1949) states that adolescents generally find considerable enjoyment in making things purely because of the activity involved. However, Tasmanian girls of fifteen, apart from the below-average-intelligence group, apparently derive little enjoyment from this activity. This disinterest is very probably associated with the limited opportunities offered.

Hurlock says:

"For girls the popular construction activities are clay modelling, drawing, painting, weaving, basket-making, cooking of such delicacies as candy, cake, cookies and fancy desserts, and designing and making dresses and hats for themselves. Both boys and girls enjoy making scenery and costumes for their school plays." Few of these activities are available as school hobbies to children in Tasmanian schools - or where more than two or three are available, they are perforce restricted to a limited and chosen few pupils - so not many of such activities are likely to be within the experience of the girls answering the Questionnaire or are even likely to occur to them as activities which could have been intended by the description "constructing things".

The trend of interest in social activities agrees with that described by Lehman (1926) in his study of social dancing, (e), a very slight interest until the age of $12\frac{1}{2}$ to $13\frac{1}{2}$ years, then an abrupt rise in the interest curve until about the age of $14\frac{1}{2}$ years followed by a flattening and a subsequent sharp rise between the ages of $17\frac{1}{2}$ to $18\frac{1}{2}$ years. At thirteen we find a pronounced interest in social activities; a social activities club is 1st preference for girls of above-average intelligence and 2nd preference for the average group. The same rank orders hold for the equivalent groups at 15. There is no statistically significant difference between the frequency or the mean value of the choices for the Modern School and High School groups. However, if we compare the above-average intelligence and below-average intelligence groups there is a tendency for the brighter girls to give a higher choice to social activities than the dull girls do. This may be associated with earlier maturation and also with acceleration in school grades which puts them amongst older girls who are more mature. In addition 33 of the 36 girls with above-average intelligence come from the High School which, as was mentioned earlier, gives greater opportunity for the development of interest in social activities than the Modern Schools do.

But the club which has the most consistent appeal - whatever the school, the age, or the level of intelligence, is the one which caters for physical activity, not necessarily highly organised or competitive, e.g. walking and skating.

As Hurlock (1949) says - "In addition to sports of a highly organised form, boys and girls during early adolescence enjoy less highly organised sports such as ice-skating, roller skating, swimming and folk-dancing..... Early adolescence ... is the period in adolescence when interest in games and sports involving great physical energy reaches its peak. As growth slows down, between the ages of 15 and 18 years, there is a decline in interest in active sports."

The marked difference between the preference index for (e), enjoyment of the arts, given by Modern School girls at 13 and 15 years of age is again due to the effect of the below-average intelligence section on the total Modern School group. The average and above-average groups show no significant differences at 13 and 15 in their choice of this type of activity, but the below-average girls have almost no interest in it, again possibly because it demands some creative ability they do not possess.

(iii) A Comparison of Club Interests for Boys and Girls:

(a) Collecting. This is an activity which appeals strongly to both boys and girls up to the age of fifteen. At fifteen High School boys give significantly higher preferences to this activity than Modern School boys do ($t = 3.353, d.f. 72, p < .01$) because of the presence of the most keenly interested group of boys - those of above-average intelligence - in the High School group. But the reverse is true for the girls since collecting is favoured most by the girls below averageⁱⁿ intelligence who

predominate in the Modern School group ($t = 7.447$, $d.f. = 89$, $P < .01$). That is, Boynton's (1941) finding that collecting seemed to be favoured by children of superior intelligence is true only for the boys in this study; there is here wide divergence in the degree of interest between the two/^{sex}groups with superior intelligence and between similar groups with below-average intelligence.

For composite groups (i.e. grouped according to age and sex but regardless of intelligence level or school) there are no significant differences in the numbers of boys and girls who include collecting within their first three choices (at 13, Chi-square = .0702, $P = .80$; at 15, Chi-square = .3097, $P = .50$).

(b) Constructing. Whatever the intelligence level or the type of school attended the boys' preference for this activity far exceeds that of the girls. Between the ages of 13 and 15 years the interest of the average and superior intelligence group remains constant for boys but shows a waning for girls. With both sexes there is a much more marked interest in this activity shown by the duller children in comparison with the remainder of the the children. Earlier studies reveal that duller boys prefer activities of a motor type and this probably accounts for this noticeable interest.

(c) Discussing problems: "The desire to express oneself through speech is so strong in adolescence that few adolescent boys or girls are good listeners. Each individual is so anxious to talk that it is hard for him to be passive and listen to what others have to say", comments Hurlock (1949).

This may account for the decided lack of interest in discussion which, if of the type indicated in the Questionnaire, demands that the adolescent restrain his own talking for the biggest part of the time and listen to others. The fact that boys tend to be more interested than girls may be due perhaps to the type of discussion suggested i.e. political. Jones (1943) found that among High School students topics of a political nature were talked about often by 36% of the boys but only by 17% of the girls and that for boys such topics ranked fifth in importance in a list of 12 topics but ranked only tenth for girls.

(d) Self expression. In all four age-sex groups, except the 15 year old boys, most interest in self-expressive activities is shown by the children of superior intelligence. It seems probable that these children recognise and verbalise their need for self expression more clearly than children of lower intelligence levels. These latter undoubtedly express themselves in some fashion, possibly through craftwork, or through constructing things but think of these activities as 'just making things' (activity type (b)) rather than as expressing inner drives (type (b)). The significant difference in the frequency of choice for 13 year old and 15 year old boys of superior intelligence ($\text{Chi-square} = 10.02$, d.f. = 1, $P < .01$) may be due to increased diffidence on the part of the older boys to take part in activities such as dramatics where physical changes of adolescence e.g. broken voices and gangling limbs, are conspicuous and embarrassing.

(e) Enjoyment of the Arts. The preference indices for this type of activity and their rank order are consistently higher for girls than for boys. Several factors would contribute to this sex difference. Boys are often afraid that they may be regarded as effeminate if they are interested in music, singing, art etc. instead of the rough and tumble of the sports ground; parents frequently consider them too clumsy and noisy to be trained to play a musical instrument, whereas they encourage girls to acquire and develop skill in the arts because they are admired as social graces; boys are usually only too ready to enjoy the sense of their growing strength by indulging in outdoor activities in preference to the activities which require restraint and control of their physical energy.

(f) Social. The difference in degree of interest registered by boys and girls in this activity is very marked. No matter on which basis the groups are compared, the girls' interest is greater. This is in accordance with Hurlock's (1949) summary of sex differences in social dancing which we may take as a typical social activity: "Social dancing is more popular with girls than boys of a corresponding chronological age. This of course is traceable to the greater maturity of the girls."

(g) Natural Science: A natural science club has little appeal for either sex in comparison with other suggested types of clubs. However, about twice as many boys as girls (approximately 20% of the boys compared with 10% of the girls) check it as one of their first three preferences. This suggests

a rather higher interest among the boys.

(h) Physical Activities: Early adolescence is recognised as the peak period for interest in games and sports demanding much vigorous physical activity. Children of both sexes in this study rank this activity as a prime favourite. The girls of lower intelligence find it the most attractive of all the possible choices though the corresponding group of boys finds physical activity second in appeal to constructing. But for the rest of the groups strength and frequency of choice are fairly evenly matched.

(II) Play Interests.

In the second section of the Questionnaire the activities and interests of the child outside school hours were tapped. There was much less restriction of choice because he was permitted to add to the lists of activities printed in the Questionnaire. However, no allowance was made for the rather vague activities such as whistling, playing with pets, romping, or telling riddles which Dimock (1937) found to occupy a considerable part of the time of boys aged 12 to 18 years. This was deliberate. The aim was to get first an indication of teen-age preferences for activities which, by usage, are accepted as belonging more or less to the category of sports and games. The second list gave a broad coverage of similarly accepted hobbies. In this second list there was one regrettable omission, viz. 'making something'. For the girls this was probably not important since the list included knitting, sewing and gardening as separate

items, but in the light of the choice given by boys to 'constructing' as a club activity it was unfortunate since gardening and meccano are scarcely adequate coverages or representatives of the whole range of boys' activities implied in the description 'making something'.

It must be remembered again that the ratings given to the various games and hobbies indicate generalised preferences but are not necessarily indications of what the boy or girl actually does. This comes later when the individual is asked to enumerate the six activities that he participates in most often. However, one would expect that the normally intelligent and satisfactorily adjusted child would prefer those things with which he is most familiar, e.g. football, cricket, swimming, hockey, though there may be differences between children attending different types of schools because of the differences in the range of activities offered them.

Another factor likely to influence the choice of activities is the season of the year. Since the Questionnaire was given in the middle months of the year, winter sports would be most likely to be in the focus of attention.

Since the section deals with activities not necessarily or intimately associated with the classroom or the particular type of school attended, the distinction between the two populations (High School and Modern School) is not rigorously maintained throughout.

Boys' Sports.

Do boys of fifteen many of whom we expect to be pubescent or post-pubescent and well established in their particular type of secondary education, differ in their sports interests from the boys of thirteen, many of whom we expect are pre-pubescent and only just beginning their secondary education?

Table F(i) Appendix shows the sports which have a preference index of more than 5 points. It will be observed that the preference indices for football, swimming, cycling, athletics, and basket-ball do not vary substantially between these two ages. Differences in frequency of choice according to the Chi-square test, and in the mean value of the choices according to the 't' test were not statistically significant.

The pattern of interests differs quite considerably for the two types of schools. (See Table G(ii) Appendix). For both types, cricket and swimming alone have comparable ratings for comparable age groups; baseball, cycling, and fishing for the 13-year old groups only; and athletics, skating and yachting for the 15-year groups only.

The frequency of 1st to 3rd choices for football, boxing and cycling (at fifteen) is higher - at a statistically significant level - for Modern School boys than for High School boys. (Boxing receives only one choice, a 3rd., from all the High School boys of both thirteen and fifteen; cycling receives none from the fifteens; and for football the difference is significant at the 5 per cent level).

On the other hand proportionately more High School boys choose basket-ball, soccer and tennis.

Sports whose appeal is greater for the older and more mature boys are cricket ($t = 4.652$, $P < .01$, $d.f. = 124$), and yachting (not preferred by any 13-year boys). Those with noticeably waning appeal are fishing ($t = 5.501$, $P < .01$, $d.f. = 124$), cycling and baseball (these two activities among High School boys only who gave no preferences to them at fifteen).

Interest in boxing and tennis probably reflect the influence of familiarity on choice. High School boys are accustomed to tennis as one of their regular school sports but the Modern School boy has few, if any, opportunities to learn the game. Boxing is accepted as a reasonable way for boys to settle their differences in the Modern School but in the High School they are encouraged to discuss their differences and to reach a conciliation. So only one High School boy puts boxing among his selections and only three Modern School boys give any choice to tennis.

Basket-ball and soccer are definitely more favoured by boys of superior intelligence than by the remainder (there is significantly higher frequency and mean value of choice), and base-ball and ice-skating by the average and below average in intelligence. Dimock (1937) found a slight tendency for pubescent boys to favour basket-ball and considered that 'the clue might lie in the greater physical stature' of pubescent boys. Since pubescence tends to occur earlier with boys of superior intelligence (see Hurlock (1949) .p33) this seems a probable explanation of the

preference given basket-ball by this group of boys of superior intelligence; and if so, the same factor of physical stature may account also for their interest in soccer.

The boys' favoured activities are predominantly those which demand vigorous physical effort and require team work, or at least some group participation. (See Tables H (1) and G (Appendix.)

Although only a small group of 13-year boys answered Part II Q.4 (N = 34) and Q.5 (N = 43) of the Questionnaire their selections show the same trends as for the larger 15-year group, viz. highly active games and team work. This is in agreement with the findings of Lehman and Witty (1927b), who reported that at 15 years of age active team games are the most important form of sport for boys, and of Hurlock (1949). Hurlock concludes that in early adolescence the most favoured games are 'highly organised games with well-established rules and with each player having a specified role to play, e.g. football, basket-ball, baseball, sports(which)involve expenditure of much physical energy as well as keen competition (and) regulated by strict rules.'

Girls' Sports.

The girls' selection, as one would expect, differs markedly from the boys'. (See Table F(ii) Appendix) .

Swimming, basket-ball, ice-skating, and dancing are the first choices for both age groups. With the exception of basket-ball each of these is relatively individual and uncompetitive and has something of the quality of a 'social grace'.

The lower preference for swimming at fifteen as compared with at thirteen may arise from restricted opportunities for swimming resulting from pubertal changes. Proportionately fewer girls choose this sport at fifteen and those that do give it a much lower choice.

As with the boys preference for one or two specific sports seems to be associated with the type of school attended. (See Table G(ii) Appendix). . . Selection of hockey is restricted very largely to the High School girls; so too is the selection of tennis and country dancing.

Two sports show consistent and significant changes in appeal according to the level of intelligence, viz. hockey, which is given significantly higher mean values of choice by each successively higher intelligence group, and basket-ball where the reverse occurs. (See Table G(ii) Appendix). . .

Like the boys, the girls prefer vigorous physical activities, (Table H(i)Appendix), . . though the sports to which they give their preferences are on the whole less strenuous and require less sustained output of energy than those chosen by the boys. These provide outlets for the rapidly increasing physical energy and vitality of adolescence accompanying the rapid body growth. But the girls differ in their attitude to team games, (Table H(i)Appendix). . . Whereas 77% of the boys said they preferred games requiring groups of players, 50% of the girls said they would prefer to take part in a sport or pastime . . which they could play alone or practically alone -- and three of the four favourite activities, viz. swimming, skating, and

dancing, do come into this category. Hurlock (1949) attributes the earlier decline of girls' interest in team games to their earlier maturation and resultant development of heterosexual interests. Considering the sports which are favoured -- those which permit heterosexual contacts and to which a girl frequently has a male escort -- this seems a fitting explanation for the difference in team game interest between the girls and boys in the Tasmanian group.

Spectator Sport:

'For the typical older adolescent what interest there is in sports is passive rather than active. He enjoys going to athletic contests as a spectator', says Hurlock (1949). Dimock (1937) noted a similar change: 'Our attention is arrested by the striking fact that as boys become older they spend an increasing amount of time, nearly three times as much, as spectators of games and sports'; and later; 'A few of the older boys, particularly those who 'make' the school teams, spend considerably more time in these activities (sport and play) but this increase of time is more than offset by the reduced participation of the majority. When these facts are coupled with those that indicate an increase of the spectator role, they strongly suggest that the germ of 'spectatoritis' is already taking hold during adolescence.'

According to the opinions of many school teachers and other more casual observers this would appear to be true of Tasmanian adolescents also. Is it simply due to a decline

of interest in physical activity? If so, we would expect to find watching preferred to participating even by 'good' players. But this is not the case. Provided the adolescent can play a game well he or she prefers, in the overwhelming percentage of cases, to be an active participant. Percentages preferring participation are:- girls 13 years of age 71%, girls 15 years of age 89%, boys 13 years of age 91%, boys 15 years of age 94%. Proficiency, then, seems to be the keynote. But the motor performance of boys and girls during adolescence is often awkward and the adolescent, hypercritical and unsure of himself, shrinks from 'making a fool of himself' with a gauche performance, particularly in front of someone of the opposite sex. This lack of self-confidence could easily account for the disparity between the desire to participate and actual participation, and lead to the 'spectator habit'. Factors which maintain the habit later may be quite different, such as reduced leisure time, additional responsibilities, preference for the company of the opposite sex.

Another feature of the attitude to sport was the choice of role. With the exception of the 13-year-old girls, all groups preferred the position of an active team member to that of captain, manager or umpire. These three roles isolate the individual from the group -- a position which the adolescent does not like -- and the latter two are frequently more passive. Captaincy, too, is a position which invites criticism, and adolescents are fearful of criticism. The question, 'Why do the 13-year-old girls prefer the role of captain?' remains unanswered.

Non-sport Activities:

Sports and games are not the sum of adolescent leisure activities and entertainments. Hobbies, films, radio and other amusements have their place. Table H(1) Appendix shows the relative preference ratings given by each sex at thirteen and fifteen to representative non-sport leisure activities.

The theatre or cinema and reading are popular with all groups; playing a musical instrument and listening to the radio important but not so uniform in their appeal; and collecting high in favour with the male groups.

Collecting as a school club activity was relatively well favoured by both boys and girls. When range of choice is extended to include less organised activities and activities quite devoid of the flavour of school, collecting still rates quite high for the boys but is significantly lower for the girls, particularly the 15-year girls few of whom include it in their first three choices. Sullenger (1938) found a tendency for more secondary school girls than boys to be interested in making collections. For these Tasmanian children the reverse seems to be indicated by these preference indices, and this is supported by the fact that, in a later section of the Questionnaire, 10% of the boys compared with only 5% of the girls name collecting as an activity in which they frequently participate.

At thirteen the boys find the theatre or cinema the outstanding attraction and rate it far higher in appeal than girls of the same age. At fifteen, though less obvious, the difference between the choice of that activity for the two sexes is still highly significant, ($t = 11.83$, $P < .01$, d.f. = 123). In studying attitudes to Movies, Lehman and Witty (as reported by Hurlock (1949)) found that going to the Movies was more popular with adolescent girls than boys.* Hurlock attributed this to changes of interest in the subject matter of films -- the boys outgrowing their interest in Westerns and Cowboys but slower than girls to develop a taste for filmed Romances. If such a decline of interest in certain film topics has occurred among these Tasmanian boys before the age of fifteen, it has evidently been accompanied by the development of interest in other types of films, or else other quite different factors such as the wish to be with the crowd or the wish to assert independence of the home combine to maintain their interest in theatre-going.

Interest patterns for the two different age-groups of boys show very little variation, but there are more marked variations for the girls. At fifteen few girls are interested in collecting but their interest in radio listening ($t = 5.10$, $P < .01$, d.f. = 140) and the theatre ($t = 3.77$, $P < .01$, d.f. = 140) is much keener than that of the younger girls.

Note: Lehman and Witty were working with adolescents up to the age of $16\frac{1}{2}$ years.

It may be that the older girl finds increased pleasure in listening to the radio because many of the serial types of programmes feed her awakening heterosexual interests.

(In lists of favourite radio programmes submitted by secondary school girls for purposes other than this study serials of the romantic-family-life type were conspicuous but no exact analysis was made of these radio choices). Similarly interest in the theatre may be largely attributable to the growth of heterosexual interests with an accompanying liking for screened 'romances' and for the opportunities for enjoying the companionship of male escorts.

Sport and Non-sport combined.

In the previous section we considered the appeal of sport and non-sport activities independently. Now we widen the field and consider choices made between broad classes of activities instead of between particular items in each class, e.g. sports are grouped to make a single unit, hobbies combined make another, etc. We can reasonably expect that the appeal of some activities, quite well-liked when considered in relation to a few other activities, may be relatively unpopular when they are enclosed in a broader framework.

Tables J(i) and J(ii) Appendix) set out these major classes of leisure activities and their indices of relative appeal. On the boys' preference scales sport is far and away the favourite activity -- rated almost twice as high as hobbies, the next most popular. The cinema rates third. Reading maintains the same rank order of preference at fifteen as at thirteen

though it is selected by significantly fewer of the older boys ($P < .02$). Both age groups give a lower value of choice to reading than to pictures, the difference in the mean value of the choice being statistically significant at the 5 per cent level. Radio-listening is chosen by only a few boys and by the big majority of these is ranked as only a third choice. The appeal of the remaining activities is negligible.

It is interesting to note that, as before, the most attractive activities are those requiring much physical energy or permitting some creative activity, and that the more passive or solitary entertainments, e.g. radio, music and talking have as yet minor appeal. Reading, though to outward appearance passive and solitary is not truly so, since the reader projects himself into the story and peoples his world with the characters of his book and, at an emotional level at least, takes part in their activities.

The preference scales for the girls follow something the same pattern as the boys' with the physical activities of sport and dancing particularly popular at fifteen. Dancing and the cinema have higher, and reading lower, preference indices at fifteen than at thirteen, not because they are chosen less frequently but because the mean value of their choices are higher or lower respectively. The difference in these means is statistically significant at the 1 per cent level. The less social pursuits such as playing a musical instrument or working at a hobby receive much lower preference indices, presumably because although they have quite a strong appeal (see previous

Tables) they are not activities which a girl would wish to do as her sole leisure occupation for any considerable period of time, that being the basis on which they made their choices.

As we have noticed before variations in choice occur in association with differences in the level of intelligence. Among these broad classes of activities, Reading is the outstanding example of such an association. (See Table J(i) and J(ii) Appendix) . Regardless of the age or sex of the group reading consistently appeals more to the children of higher intelligence. Previous investigators such as Boynton (1941) and Lehman and Witty (1927c) found the same association in their studies. In the fifteen year groups where there are comparable-size groups of children with below-average, average, and above-average intelligence there is noticeable also a tendency for fewer children of the above-average groups to select picture-going. The differences in frequency for the above-average groups and the remaining groups according to the Chi-square test is, in each case, statistically significant at the 2 per cent level.

(III) Participation.

Participation and Preference:

Dimock (1937) found that the activities that appealed most were not necessarily those that had the most participants or the most frequent participation. To enable a similar comparison to be made here, the Tasmanian children were asked to name the six leisure activities in which they most frequently took part. No account was taken of the amount of

time they spent in the activities since the aim was to see which were their most frequent and persistent activities, rather than their transitory enthusiasms. The most common play activities are shown in Tables VIII and IX, Chapter V. The conspicuous feature with both boys and girls is the priority that sport activities have in participation.

Boys: The only non-sport activity in which more than ten per cent of the boys considered they frequently participated is reading, and there are proportionately fewer boys naming this activity at fifteen than there are at thirteen (Chi-square = 8.1, $P < .01$). Reading seems to have dropped out in favour of increased attention to sport.

Four of the sports listed high in preference - football, swimming, cricket and cycling (Table F(i) Appendix) are front-ranking in percentage of participation. But it is interesting to notice that some of the less appealing activities show comparatively high percentages of participation and some of the more appealing have relatively few participants. Softball, with a lower than 5 per cent preference index, is the outstanding example of the former. It probably owes its high percentage of participation to the fact that little equipment is required, that impromptu and accommodating variations may be made to the rules of the game, and that it can be played, in a fashion, by any casually collected group, small or large. Similarly draughts and table-tennis, at thirteen and fishing, at fifteen, have many more participants than one might be led to expect from their preference indices.

On the contrary, basket-ball is a desired activity at thirteen but not a frequent one.

There is much less agreement between the preferences and the participations of the younger boys, probably because they are still at the exploratory stage and readily attracted by the 'glamour' of activities which are new or different. That is, their interests are less stabilised than those of the older boys. The older boys' activities tend to be more channelised: they show greater frequency of participation in the highly organised and regulated team games, particularly football and cricket (difference in frequency statistically significant at the one per cent level for both games), and a corresponding trend towards decreased participation in less organised or less competitive activities such as swimming, fishing. They seem also to be less concerned than the younger boys in 'quieter' activities such as card games, draughts and meccano.

Girls: Between the younger and the older girls there are distinct differences in the character of the activities in which they most frequently participate. With the older girls participation is noticeably greater in those activities which combine an opportunity for physical effort with chances for heterosexual contacts, such activities as dancing and tennis. The difference in the frequency of selection of dancing is statistically significant at the 5 per cent level, and of tennis at the 1 per cent level. Although we cannot say with certainty that the fifteen year old girls are participating less in

activities requiring very strenuous physical exertion, there seems to be a tendency in that direction. The Chi-square test applied to the frequencies for swimming, basket-ball and cycling gives values just a little higher than those required for the differences to be significant at the 5 per cent level. The more passive activities of going to the theatre and reading have higher percentages of participation for the fifteen year old girls (theatre: Chi-square = 3.81, d.f. = 1, $P < .05$, reading: Chi-square = 4.899, d.f. = 1, $P < .05$).

At fifteenth the participation of the girls is more evenly distributed than that of the boys of the same age. Some half dozen activities claim equal attention. And as with the boys it is noteworthy that these activities in which they do actually take part are those which they chose as having the most appeal, viz. the sports of swimming, ice-skating, tennis and basket-ball, and dancing and reading.

Hildreth looked for a stage in development where the recreational interests of the two sexes would show noticeable divergence because of masculinity and femininity. This increased interest on the part of the older girls in more restrained activities such as tennis and ball-room dancing where groups more intimate than those of team games are involved, and their bias towards the more sedentary amusements of reading, singing and theatre-going, as compared with the boys' enthusiasm for strenuous 'mass' games and relative disinterest in sedentary activities seems to show this divergence.

(IV) Reading Interests.

Of all the non-sport activities reading has the most wide-spread appeal. It alone gains a place amongst the ten most common activities (according to participation) for both sexes, and in appeal it alone shows consistently higher ranking in choice and more frequent selection with higher levels of intelligence. Hildreth (1933) noted this association between superior ability and reading as a preferred activity.

Terman and Lima (1927) reported that at the age of twelve and thirteen children were interested in almost any kind of reading and that about the age of fourteen reading interests change radically. Individuals begin to specialise in their reading, devoting their attention to the few topics that interest them most.

Other investigations emphasise the fact that reading interests show quite marked differences between sexes.

The group of children used in this study may, then, show the same pattern^{of} differences according to sex and age as revealed in these earlier studies. Let us look at the boys' preferences first and compare them with those reported by other investigators. Table M(i)Appendix shows the boys' preferences.

Adventure stories, according to Terman and Lima (1927) are popular up to the age of 14, but are then supplanted by stories about athletics and inventions. At the same time books on mechanics are favoured, and biography, history, and travel are beginning to appeal. By fifteen they are specialising in technical reading matter connected with their particular hobby and show very little

interest in romantic literature especially of the type found in girls' books. Hildreth (1933) reported that mystery stories were the most popular with boys about this age, and adventure the next most favoured.

Hildreth's findings most nearly fit the picture for the Tasmanian boys, who, as a combined group, give highest preference to adventure stories with mystery stories and detective stories almost as popular. If the preferences for the two age groups are compared, adventure stories are chosen just as frequently at fifteen as at thirteen and in addition are given a higher rank of choice ($t = 3.213, d.f. = 114, P < .01$). Mystery stories, detective stories, and nature and animal stories are also chosen just as frequently at fifteen as at thirteen but the two latter are evidently losing appeal since they receive a lower rank of choice. (Detective: $t = 3.491, d.f. = 114, P < .01$; nature and animals $t = 2.057, d.f. = 114, P < .05$).

On the technical side, directions for making things are very popular and the index shows no significant change with age. This, as Terman and Lima suggest, is most probably associated with boys' hobby-interests and their liking for constructing things as indicated by their preference for a club devoted to this kind of activity. Similarly their maintained interest in mechanics and science, though not very wide-spread, probably has the same basis.

History and Travel make a slight appeal at fifteen to the boys above average in intelligence, and about 11 per cent of the boys, all of the average and below-average intelligence groups, give one of their first three preferences to love stories. Comics and magazines receive relatively little preference from both thirteen-year-olds and fifteens, and there is no statistically significant difference between either the choice-frequencies or the choice-ranks of the two groups. So that although comics seem to be very widely read they are, perhaps, not so well-liked as one may suppose since in each age group (both boys and girls) only about 20 per cent of the children give them a preference ranking of third or higher. Their popularity may be due to such factors as easiness in procuring them, cheapness, and the little maintained concentration required in reading them.

Table M(ii) Appendix shows the girls' preferences. Terman and Lima (1927), Hildreth (1933) and Hurlock (1949) summarise the girls' preferences as follows: At thirteen and fourteen, reading interests begin to change. Girls want emotional fiction and stories of a mature type, preferably with a strong romantic flavour. Historical novels and stories of home and school life are popular if they 'contain an element of romance'. They prefer fiction to informational reading. Hildreth found mystery stories and love stories most popular. Informational reading connected with hobbies is a far from universal reading interest among girls.

Poetry is becoming popular with the older girls.

Apart from the interest in poetry these findings cover quite well the pattern of reading interests for Tasmanian girls. Of all the girls answering this section of the Questionnaire only three included poetry in their choices.

Adventure stories and stories of home and school life are the most popular reading interests at thirteen, but at fifteen the pattern has changed considerably. Interest in school stories has waned -- they are chosen less frequently, (Chi-square = 5.43, $P < .02$, d.f. = 1) and the mean rank of choice is lower ($t = 4.416$, $P < .01$, d.f. = 139); and the latter is true of adventure stories also ($t = 6.966$, $P < .01$, d.f. = 139). The favourites now are love stories and mystery stories, as Hildreth found. Adventure stories and school stories are apparently too immature. Detective stories, like mystery stories, are more popular; more girls choose them and they are given a higher rank of choice (both differences statistically significant at the one per cent level). These stories, concerned with people in highly emotional and exciting situations, permit more mature hero-identifications than do the hero-figures of earlier favourites such as the school stories.

As with the boys, comics have the same popularity at fifteen as at thirteen. Magazines and short stories, however, are slightly more popular than formerly. This may be due to the fact that many of the 'family' magazines contain stories almost all of which are devoted to love and romance, and in addition there are many cheap magazines catering for the

adolescent girl's budding interest in heterosexual love themes.

The only non-fictional type of reading matter that receives even slight attention at thirteen is encyclopedias, but at fifteen even this slight interest has dwindled. Animal and nature stories which might possibly be non-fictional in character show no significant change in popularity.

It is interesting to note also the differences in the patterns of reading interests of the children of above-average intelligence compared with those of the child of average intelligence. Love stories are noticeably less popular with the above-average children. The difference in the mean rank of choice is statistically significant at the two per cent level. But where Historical Novels and Travel are selected they are chosen almost entirely by the above-average group. Similarly, the few girls who show interest in reading about how to make things belong to the above-average group.

(V) Social, Heterosexual and Personal Interests.

The social, heterosexual and personal interests sections of the Questionnaire were designed not to see what social, personal or heterosexual situations are attractive to these adolescents but whether they are at all interested in such situations and whether the degree of this interest varies significantly according to age, sex, intelligence or other factors touched upon in the Questionnaire.

Social Interest:

Heightened social consciousness and increasing interest in socialised activities are generally accepted as normal and integral elements in adolescent development, particularly middle and late adolescence. Studies by Leal (1931) and Dimock (1937) suggest that changes in social attitudes, interests and behaviour are related to sexual maturing rather than to chronological age.

We may reasonably expect that many of the fifteen-year-old girls, perhaps the majority of them, are pubescent or post-pubescent, but because of the later maturation of the boys - according to Terman the boys lag some 12 to 20 months on the average behind the girls in pubertal development - we cannot assume the same degree of sexual development in the fifteen-year-old boys. And this probably explains the absence of a significant difference between the mean social scores of the thirteen and fifteen-year boys, and the presence of a significant difference between the groups of fifteen year old boys and girls ($t = 4.052$, $P < .01$, $d.f. = 166$). Though the mean score for the fifteen year girls is not sufficiently higher than the mean for the thirteen year girls to be different at a statistically significant level ($t = 1.658$, $P = .10$, $d.f. = 149$) the trend is in that direction, and the fact that the increase in interest is not so marked may be accounted for in terms of the earlier maturation of the girls and the probability that the thirteen year group contains a number of pubescent girls. The fifteen year old

boys show no greater social interest than the thirteen year old boys ($t = .4399$, $P = .70$, $d.f. = 121$), nor is there any significant difference between the mean scores of the boys and girls at thirteen ($t = 1.014$, $P < .40$, $d.f. = 104$). For the Table of mean scores, see Table K, Appendix .

So though we may consider our groups of thirteen year old boys and girls as comparable in the extent of their interest in social situations, with our fifteen year groups the difference is so great that we must treat them separately. If this difference occurs between other similar groups of adolescents, as indicated in Chapter IM, it becomes an important factor to consider, especially in planning school and extra-curricula activities. Training in acceptable patterns of adult social behaviour and opportunities to acquire adult social skills will need to figure earlier in the girl's curriculum than in the boy's; and where mixed groups of adolescents, of comparable social development are required (e.g. at school dancing classes, dances and socials) it will usually be necessary to turn to groups of boys who are older, chronologically, than the girls and therefore more likely to have reached a similar stage of pubertal development.

The general pattern of the social interest scores agrees with the findings of Terman's (1925) studies in which 'the "sociability" ratings of both selected and unselected children, based on preference for social versus non-social plays and games, averaged higher for girls than boys at every age,' and in which, on Wyman's Word Association Test, 'the girls

showed consistently above the boys in social interest'.

Heterosexual Interest:

Since the dynamic force behind the development of heterosexual interests is provided largely by the glandular changes taking place in adolescence, we expect to find a more marked association between puberty and degree of heterosexual interest than between chronological age and heterosexual interest. Leal (1931) reported that in the pubescent or maturing^{stage}/there is a lack of interest in the opposite sex, and, on the part of boys, a wish to avoid the opposite sex. In the post-pubescent stage positive attitudes become predominant and interest in the opposite sex, romantic in nature, becomes apparent.

Between the mean score of the fifteen year old girls -- the group we expect to contain the highest percentage of post-pubescent individuals -- and the mean scores of the other groups there are marked differences, these older girls having the highest mean score of all the groups. (See Table K Appendix). At thirteen boys and girls show approximately the same degree of heterosexual interest; and at fifteen there is no significant change in degree of interest shown by the boys. This seems to be in accordance with Leal's findings.

Personal Interest:

As the adolescent experiences changes in his body-size and contour and begins to be aware of an interest in the opposite sex, he becomes increasingly conscious of his own appearance. This means that, like social and heterosexual interests, interest in personal appearance has some association

with sexual maturation. Stone and Barker (1939) found that post-menarcheal girls had a much 'stronger interest in adornment and display of person than the pre-menarcheal'.

Since the boys and girls were given separate sections on personal interests, valid comparisons between the scores of the two sexes cannot be made. Although the situations in the two sections were made as comparable as possible it must be admitted that they are not always true parallels. For example, the first group of questions for the girls: 'Do you use cosmetics? etc., is not quite comparable with the first group for the boys: 'Do you use hair oil?' etc., since in our culture the use of hair-oil by adolescent boys is accepted without comment, whereas the use of cosmetics by adolescent girls is often criticised strongly. And it may be because of such differences in cultural attitudes that the thirteen-year-old boys have a significantly higher mean score than the thirteen year old girls.

The important finding however, is that with both sexes there is a decidedly higher degree of interest in personal appearance shown by the older groups (see Table K, Appendix), a finding which agrees with the general trend of the conclusions of Stone and Barker.

Intercorrelations:

A number of hypotheses are put forward in this section. They are not given as final and proven explanations but as possible explanations which would require further study and research before they could be accepted or rejected.

Terman (1925) and Lehman and Witty (1927c and 1927d) found that gifted children tended to be more solitary in their play activities than were children of average intelligence, while pedagogically retarded children demonstrated a need for activities which provided social contacts. It was possible, Lehman and Witty thought, that the retarded child compensated for his pedagogical retardation by social development.

We looked to see if there was a similar heightened interest in social contact on the part of the duller children in our group, and a correspondingly slighter interest on the part of the brighter children. In the Tasmanian groups, however, the only significant correlation* between intelligence and score on social interests was that for the thirteen-year-old boys -- a negative correlation of .33. In this group, for the boys rated as having intelligence A or B according to the 5 point scale shown in Chapter III the correlation was practically zero, the weight of the negative correlation being found with the boys of intelligence levels D and E, i.e. with intelligence quotients of 93 or less on the Otis test. So that in this group it is the less intelligent boys who prefer to be with others in a social group.

It is suggested that the less intelligent boys, immature and less capable of initiating and originating play activities, turn to the group for stimulus and support.

For the remaining groups there appears to be no direct association between level of intelligence and degree of social

interest.

* Fisher's Tables for Significance of Correlations was used, the standard of significance being $P = .05$.

Correlations between intelligence and heterosexual interests also are low. (See Table X, Chapter V). For the girls they are almost identical, but because of the small size of the thirteen year old group, the correlation for this group is not significant according to Fisher's Table. The negative nature of these two correlations is, however, thought-provoking. It is probable that the girls of higher intelligence find more success, and resultant satisfaction and interest, in activities requiring mental skill, viz. in the activities of the school curriculum. Then, too, the girls of higher intelligence are those attending the High School where they are encouraged to spread their interests over wider fields rather than to concentrate on social and heterosexual activities. The less intelligent girls, denied success in intellectual pursuits, may tend to concentrate their interest in other and fewer fields and, under the stimulus of the physical changes of adolescence, some will show more interest in heterosexual activities.

There is no significant correlation between intelligence and the degree of heterosexual interest of the boys.

However, if we consider social and heterosexual interests together we find that there are positive and significant correlations (for all groups except the fifteen year old boys: these correlations are significant, according to "Fisher's Table", at the one per cent level). This association seems quite logical. Where there is a desire for heterosexual relationships, the individual will tend to take an interest in group activities where he can find companions of the opposite sex. Other factors may

act in opposition; for example, the individual may be so unsure of himself as to fear to enter into social situations though he desires heterosexual companionship. Gaucherie is a frequent fear stimulus in adolescence, and it may be this fear of awkwardness in a social situation which is the reason for the very low correlation between the social and heterosexual interests of the fifteen year old boys.

Garrison (1934) neatly summarises the relationship between heterosexual interests and attention to personal appearances. He points out that when pubescence arrives and interest in the opposite sex becomes manifest, there is a keener consciousness about personal appearance. "Before this time the girl ... has not shown much interest in styles or appearance except in a sort of imitative manner. With the onset of pubescence she becomes more interested in the show window and fashion sheet ... (The boy) is very interested in making the most of the things he uses. The well-pressed suit and clean shirt become the order of this time; he turns his attention to cleanliness and to well groomed hair and nails ... This increased interest in both boys and girls reaches a very great height toward the post-pubescent period."

And this is precisely what we find in our study. Girls, maturing at an earlier age than the boys, tend to have slightly higher correlations between heterosexual and personal interests, although for all three groups - girls fifteen, boys fifteen, girls thirteen - the correlations are significant at the one per cent level.

Since the thirteen year old boys are most probably still in the pre-pubescent or early pubescent stage, it is not surprising that the correlation for their group is low as their interest in heterosexual companionship and personal appearance would scarcely be aroused.

The final correlations made were between scores on the social adjustment scale of the Bell Adjustment Inventory and on the Social Interests Section of the Questionnaire. It will be remembered that the Scale discriminated only between the relatively maladjusted children and the remainder of the group, not between the relatively well-adjusted children and the remainder of the group. This lack of discrimination would tend to cloak the nature of the correlation. In spite of this, however, positive correlations significant at the five per cent level are found for the two groups of girls, and a positive correlation significant at the one per cent level for the fifteen year old boys. The correlation for the thirteen year old boys, though low, is in the same direction. That is, children who are socially well-adjusted tend to show greater interest in social situations and activities than those whose social adjustment is relatively poorer.

(VI) Socio-Economic Status and Interest.

The preferred leisure activities for boys of all the socio-economic groups were Sport, Hobbies, Pictures and Reading. However, the noticeable feature at both thirteen and fifteen years of age is that boys of the two lowest socio-economic groups give much lower preference to reading than do any of the other groups. This is a matter of giving reading a lower rank of choice rather than choosing it less frequently.

Similarly, the fifteen year old girls of all socio-economic ranks, choose Sport, Dancing, Pictures and Reading, but again reading scores much lower preference with the girls of the two lowest ranks. At thirteen the preference rating of sport increases and interest in reading decreases as the socio-economic rank drops.

This decreased interest in reading on the part of children of lower socio-economic status is a consistent feature throughout. It is probable that there is less encouragement to read and fewer books immediately available in the homes of these children.

In actual participation also, socio-economic status seems to have little influence. The same activities are popular with all ranks within each age group. There is, however, a slight tendency for children in the upper socio-economic groups to be more definite in their activities; i.e. they seem to concentrate their attention on a fairly wide range of activities and show less of the scattered and apparently haphazard adherence to the less usual activities, that occurs in the lower socio-economic groups.

(VII) Adjustment and Interests.

Because of the very small size of the group studied in this section, the aim was merely to see if there were "pointers" toward certain patterns of behaviour. It was thought possible that children who were socially or emotionally maladjusted in relation to the rest of their group might show different patterns of interests such as a preference for solitary activities or perhaps a tendency to compensate for their feeling of social insecurity by being aggressively social in their preferences. However, no such patterns consistently appeared. In the matter of broadly classified leisure activities, the socially maladjusted children prefer in rank order, sport, hobbies, pictures and reading - the same sort of pattern as was found with the total groups. Similarly, for preferred sports, the girls choose skating, swimming and dancing - the three major preferences for the total groups; and the boys choose football, cycling and athletics, all of which are commonly preferred sports. They show a desire equally as keen as that of the normal children to participate in games which they can play well and there is no tendency to restrict themselves to games played only by small groups. The boys' chief reading interests are detective stories, directions for making things, and comics; the girls' prefer adventure, love and mystery stories. Here again there is marked no/divergence from the common pattern. It appears then, that with this small group of children, social and emotional maladjustments have no conspicuous effects on interest patterns.

CHAPTER VII.

Conclusions.

On the basis of the data given in the foregoing pages certain conclusions applicable to this particular group of Tasmanian adolescents may be drawn, and regarded tentatively as probable conclusions related to Tasmanian children of similar environments and with similar backgrounds.

Of the six main factors whose influence on the pattern of interests we considered (viz. age, sex, type of school, intelligence, socio-economic status, and personality adjustment) socio-economic status and personality adjustment appear to have the least influence. Because of the rough approximation of the High School group to the group above average intelligence and the Modern School group to the average and below-average intelligence group, it is difficult often to assess which of the two factors (type of school or intelligence) is the one having the greater influence on the interest patterns. However, the bias of the teaching of the particular type of secondary school, appears to be an influential factor in the children's selection of school subjects and in their interest in some sports and leisure activities. It would seem therefore, that though there are basic interests appearing at different ages, the school can do, and does do, much to influence the direction that the expression of these interests take. So then if we are applying our findings to children of other schools such as High Schools

in rural or semi-rural districts, or Area Schools, we must take into account the general aim of education in that particular school because of the children's interests, in school subjects especially, are likely to reflect the school's bias.

Although age served as a useful - and in most sections, satisfactory - dividing line between groups, it seems very probable that in the study of social and heterosexual interests it would have been advantageous to know the stage of pubescence reached by the children because of the part that the glandular changes of pubescence play in stimulating these interests. In terms of chronological age, the girls show earlier interest in social and heterosexual activities than the boys and it seems most probable and reasonable that this is due to their earlier physical maturation. However, in planning social activities for adolescents, particularly where the planning is done by other than school bodies, and where it is customary for groups to be segregated according to age, it is important that allowance be made for this earlier development in interest on the part of the girls. In adolescent heterosexual groups the boys on the average will need to be rather older than the girls, if their social and heterosexual interests are to be at a comparable stage of development.

Although there are sex differences in the specific sports and leisure activities of these boys and girls, there are also certain features common to the activities of both sexes. Both prefer interests which are highly active and require the output of considerable physical exertion; both prefer active

participation to passive watching; both prefer the less responsible and less solitary positions in group games. Organisers of activities for children at this age-level therefore need to provide activities which permit plenty of movement but do not require too soon, too much responsibility. Since these girls tend to lose interest in team games earlier than the boys and by the age of fifteen were showing a noticeable interest in more individual activities, it seems that even early in adolescence there must be differences in the types of sport activities offered the two sexes.

The broad conclusions drawn by such psychologists as Garrison and Hurlock on the bases of the findings of other psychologists in specific studies of adolescent interests and activities are supported by the findings of this investigation. These earlier studies have suggested that interests primarily depend on, and are limited by intelligence, sex, physiological development, environment and opportunities for acquiring interests. Instead of treating 'environment' and 'opportunities for acquiring interests' as separate factors, we have considered interests in relation to type of school which to a large extent supplies these factors since the child spends a big proportion of his waking time there.

We have found that these factors enumerated above are important in the development of the interests of our group of adolescents. The sequence of development shown by the Tasmanian children is, in broad outline, comparable to that shown by children in these other studies - e.g. growth of

interest in such things as personal appearances, social activities and certain reading topics are related to certain stages of adolescent development and differ between the sexes. Differences between our findings and those of other studies are most often differences in the specific mode of expression of an interest, arising from the nature of this particular environment and from its established cultural patterns of behaviour.

CHAPTER VIII

A Subsidiary Study.

A comparison of some aspects of the interest patterns of the thirteen-year female group and the fifteen-year male group.

Stage of pubertal development had been considered too difficult to ascertain for use as a known factor in comparing groups in the major study. Yet it was felt that a study of groups of the same - or roughly the same - average pubertal development might uncover other and closer links between certain patterns of group interests than had been apparent in the major study; e.g. relationship between pubertal development and social attitudes as suggested in Leal's (1931) and Dimock's (1937) studies. (See reference, p.87).

Accepting the evidence that the average age of puberty of girls in the U.S.A. is early in the fourteenth year, and that boys mature some twelve to twenty-four months later (see Table L, Appendix; and Hurlock (1949), p.31), it seemed reasonable to accept the thirteen-year girls and the fifteen-year boys in the Tasmanian study as being approximately comparable in pubertal development.

On this basis a small subsidiary study was made to see if any marked social or heterosexual attitudes were shown by both or either of the groups, and whether answers on other sections of the Questionnaire were as might be expected in accordance with such attitudes.

The sections chosen were those most concerned with leisure interests and pursuits and thought likely to be the ones most free from the impress and the limiting requirements of school curricula. The Questionnaires of the few children of below-average intelligence were omitted for the following reasons. First, there were too few girls of below-average intelligence to counterbalance the number of boys of the same level of intelligence: secondly, the major study had indicated that intelligence appeared to be an important and fairly stable factor in influencing attitudes and patterns of interests.

A start was made by looking at specific items in the social and heterosexual sections of the Questionnaire. The total section on social interests was originally scored only with the intention of discovering whether various groups were interested or not in all sorts of social activities to any extent, and whether the degree of interest varied to any significant degree between the groups. However, the questions in this section referred to two distinctly different types of social situations :

(a) formal or relatively organised situations -

Questions 1, 3, 4, 5, 6, 8, 13, 14

(b) informal or relatively 'homely' and unorganised situations - Questions 9, 10, 11, 16, 17, 18.

It was felt that while adolescents might very much like to be in a social group or activity their lack of

confidence and - with the boys, perhaps, in particular - of muscular co-ordination might make them shy of formal situations. Such an attitude to these situations could, when the section on social interests was being considered as a unit, result in concealing a positive attitude to informal social situations. So these two groups of questions were considered separately.

Answers indicate that both the boys and the girls prefer informal to formal social situations, and enjoy informal situations. Most adolescents of both groups like to entertain their friends at their own homes and find this type of social activity more attractive than such formal entertainment as the dance or ball. More of them, however, seem to find the loosely organised and supervised activity of youth clubs and youth groups preferable to the task of having to be the guests in their friends' homes. Possibly they prefer to be lost in the youth club 'crowd' than to be the centre of attention in a strange home or a small group where there may be critical adults. (See Table XI, below). Where adult restraint and supervision is completely absent from the situation and choice lies between a large loosely-knit group and a small select group of contemporaries (Questionnaire Section IV, questions 11, 17) seventy-four per cent of the boys and eighty-two per cent of the girls choose the small group. Fifty per cent of the boys but only thirty-eight per cent of the girls prefer going out with the 'gang' to being at home - a difference statistically significant at the five per cent level.

TABLE XITypes of Social Situations Preferred

Situation	Percent. of Girls favouring	Percent. of Boys favouring	Signif. of Diff. shown by Chi-sq.
Having friends home	93	78	P - 1%
Going to friends' homes	80	58	" 2%
Going to dances	73	44	" 2%
Going to balls	73	36	" 1%
Going to Youth Organisation activities	88	64	" 2%

TABLE XIIAttitude to and Interest in the Opposite Sex

Aspect	Percentage of girls favouring	Percentage of boys favouring
Having some friends of opposite sex	63	74
Preferring functions where both sexes present	73	80
Having particular friend(s) of opposite sex	50	62 [*]
Having more friends of opposite sex	40	38

* Difference in percentages significant at the one per cent level.

In one aspect, however, there is a marked difference between the social attitudes of the two groups. On the whole girls are ready for, and interested in, formal social activities but the boys are not. Seventy-three percent of the girls say that they do like, or would like, to attend dances and balls. This interest, it seems, is not the result of a wish to escape from home or from boredom; for while seventy-three percent want to attend dances, only fifty-eight percent of the total group would usually prefer dancing to reading at home, and only forty-eight percent would usually prefer dancing to watching a play. On the other hand only forty-eight percent of the boys state that they definitely like or would like to go to dances, but sixty percent would rather dance than go to a play and sixty-eight percent would rather dance than stay home and read. The pattern shown in the boys' tendency to favour, much more than the girls do, the 'gang', the dance in preference to reading and drama, the group outing to the family outing, suggests that the boys have a stronger urge than the girls to get away from the restraints of the home and/or the family.

In the section on heterosexual interests, one group of items was studied in detail. These questions were the ones referring directly to the individual's own immediate attitude to members of the opposite sex (Questions 3, 5, 11, 12, 13). All these questions are fairly obvious variations of the one

theme, 'Do you want to be friendly with, and mix with, members of the opposite sex?'. .

Here the boys, in terms of absolute percentages, surpassed the girls in interest in the majority of situations, but the differences were not always statistically significant. (See Table XII, above). The one really significant difference was the boys' interest in having particular friends of the opposite sex. It does not appear that the girls' interest in social entertainment of the dance variety stems solely from a wish to have opportunities for heterosexual society. Nor, on the other hand, does it seem that the boys' acknowledged interest in the society of girls is enough, at their present stage of development, to motivate the majority of them to want to take part in such activities as balls and dances.

With these trends in mind, other sections of the Questionnaire were considered and comparisons made of the two groups to see if the pattern persisted.

Clubs: Clubs which concentrate on providing physical activity are the major interest, and the one common interest, of both groups. (See Table XIII). The girls give as high a choice to clubs for social entertainment and only slightly lower to clubs devoted to enjoyment of the arts. The boys rate 'constructing things' as favourably as physical activity, and collecting their third choice, is also relatively high in popularity. This is as we might expect on the basis of the social attitudes of the two groups. The girls are interested

TABLE XIIIPreference Ratings for Clubs

Type of Club	Girls aged 13	Boys aged 15
(a)	22	31
(b)	29	50
(c)	1	15
(d)	14	13
(e)	35	10
(f)	45	13
(g)	4	13
(h)	46	51

TABLE XIVPreference Ratings for Sports

Sport	Girls aged 13	Boys aged 15
Swimming	37	
Basket Ball	27	
Ice Skating	27	
Dancing	16	
Football		40
Cricket		30
Swimming		19
Athletics		13
Tennis		11

in what we might call the social and personal graces, and in such activities as dancing they can satisfy their wish for physical activity and social experimentation. The boys want physical activity too but as yet are not ready for the conventional adult pattern of social behaviour, and so make dancing and the arts their lowest choices; their group activities are, instead, those which demand little social grace and are likely to be carried out in clubs confined to their own sex.

Sport: Here again the feature common to both groups is the preference given to highly active sports. Football and cricket, the prime favourites of the boys, are the 'manly' sports confined almost entirely to the male sex and demanding close team co-operation. Only in third place do they admit the rather more heterosexually and casually social sport of swimming. Girls, however, give first preference to swimming and third and fourth preferences to ice-skating and dancing, none of which is customarily confined to one sex nor, usually, is conducted as a team activity. Again the indication is that the girls are ready to begin practising their adult role in heterosexual society but the boys are not. Similarly when it comes to a choice between sport and non-sport activities, an overwhelming majority of the boys gives preference to sport with hobbies as a poor second choice, but the choices of the

girls are more diverse. The girls distribute their choices fairly evenly between sport, reading, hobbies, dancing and music -- as one finds in adult female society.

Reading: Even in choice of reading matter the pattern persists. Both sexes list adventure stories and mystery stories amongst their first favourites. But the girls also rate relatively highly love stories - an indication of their growing interest in and awareness of a basic feature of adult heterosexual society. The boys choose, instead, 'directions for making things' - a link with their interest in the more purely masculine group whose hobby is 'constructing things', or detective stories where relationship with reality and heterosexual society, or even adult society, need be very slight.

TABLE XV

Reading Interests - First Four Preferences

Girls, aged 13		Boys, aged 15	
Type	Preference Index	Type	Preference Index
Adventure	40	Adventure	30
Home and School	28	Detective	27
Love	27	Directions for Making Things	23
Mystery	23	Mystery	18

Summary:

It appears:

(1) that the majority of these Tasmanian city girls of average and above-average intelligence are, at the age of approximately thirteen years

- (a) ready and wanting to learn social accomplishments such as dancing and entertaining,
- (b) rather more advanced in this type of development than are boys of similar background, comparable intelligence but some eighteen months to two years older,
- (c) showing a diversity of interests similar to that found in our normal adult female society, and more diverse and adult than that shown by the compared group of fifteen-year-old boys.

(2) that the majority of these Tasmanian city boys of average and above-average intelligence are, at the age of fifteen years

- (a) showing a marked interest in making friends amongst members of the opposite sex,
- (b) seeking company and activity, and probably some escape from the restraints of the home, but are not yet ready to participate much in the more formal heterosexual activities of the community,
- (c) still needing to find satisfaction for these needs

in loosely-organised and fairly informal activities,

- (d) still deriving satisfaction - more than the compared group of girls seems to be - from participation in activities which demand a strongly-knit male team.

Comparison with Other Studies

Leal (1931) studying a group of some four thousand adolescents at New Britain (Conn.) subdivided according to sex and pubertal development found distinctive patterns of attitudes and interests for each sub-group. The results of this small study indicate some differences from her findings. The boys in particular show a different pattern. Leal found pre-pubescent and post-pubescent American boys lacking interest in the opposite sex; these Tasmanian boys most definitely do not. She found the American boys lacking gregariousness; but the Tasmanian boys chose going to a dance in preference to the more solitary amusement of reading, they favoured Youth Clubs and entertaining their friends, as many of them preferred to be out with their gang as preferred to remain quietly at home.

There is some agreement with the findings of Dimock (1937 and 1935) in that both the American and the Tasmanian groups prefer informal social activities, and in that

the Tasmanian boys - or the majority of them - like the American boys like to have a particular girl-friend.

The pattern of social interests and attitudes shown by the Tasmanian girls was more like that of the post-pubescent girls of Leal's study, and showed some characteristics which Dimock links with the post-pubescent stage. For example, the Tasmanian girls showed gregariousness, interest in the opposite sex, and interest in formal social functions, and their interests had a diversity which reflected that of our adult female population.

Whether these apparent differences really exist cannot be stated definitely on the basis of this study which has such a small number of subjects. It is probable however that environmental and cultural features, such as the restraint placed on the freedom of adolescents, the paucity of organised entertainment, the lack of youth clubs, the attitudes of schools to heterosexual activities, would considerably influence the changing social attitudes and interests of the children.

Conclusions:

As stated in the Conclusion to the major study, certain tentative generalisations may be attempted from a study of this size, but they can be regarded only as probabilities needing much further investigation before they can be accepted as proven.

It seems probable that the activities and interests

of the two groups reflect basic differences in social and sexual attitudes. The girls, even at this early stage, appear to be interested in a wide variety of social situations. Though perhaps not consciously seeking for heterosexual society, they enjoy activities where there will be participants of both sexes. The boys at approximately the same stage of pubertal development also are looking for company but turn more to crowds of their own sex and tend to avoid mixed social groups. This earlier social maturation of the girls means that they are likely to have to look for male companions rather older than themselves in order to find males whose social interests are comparable to their own. This makes the problem of social training and cultural training in our schools more difficult. Normally, schools group children and plan activities on the basis of chronological age or intellectual achievement. But it seems that the organisation might profitably be adjusted to take into account pubertal development and make it one of the key factors on which planning for social training, activities and experience is based.

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A P P E N D I X.

APPENDIX

TABLE A (i)

PREFERENCE INDICES FOR SCHOOL SUBJECTS
OF TOTAL GROUPS OF BOYS AT 13 AND 15
YEARS OF AGE.

Subject Type	Preference Index	
	At 13	At 15
	(N = 39)	(N = 81)
(a)	33	33
(b)	26	26
(c)	53	37
(d)	36	50
(e)	23	20
(f)	14	17
(g)	8	12

TABLE A (ii)

PREFERENCE INDICES FOR SCHOOL SUBJECTS
OF TOTAL GROUPS OF GIRLS AT 13 AND 15 YEARS OF AGE.

Subject Type	Preference Index	
	At 13	At 15
	(N = 50)	(N = 89)
(a)	16	21
(b)	11	6
(c)	49	42
(d)	45	46
(e)	49	49
(f)	6	14
(g)	16	18

TABLE B (i)

DIFFERENCES IN MEAN RANK OF PREFERENCES FOR SCHOOL
SUBJECTS GIVEN BY BOYS 13 and 15 YEARS OF AGE.

Modern School:

Subject Type	Mean Rank of Preference		t	P
	At 13	At 15		
(a)	.71	1.1	3.475	.01
(b)	.86	.57	2.411	.02
(c)	1.86	1.1	6.794	.01
(d)	1.38	1.82	4.395	.01
(g)	.1	.43	2.250	.02

TABLE B (ii)

DIFFERENCES IN MEAN RANK PREFERENCES FOR SCHOOL
SUBJECTS GIVEN BY HIGH SCHOOL BOYS 13 and 15 YEARS OF AGE.

Subject Type	Mean Rank of Preference		t	P
	At 13	At 15		
(a)	1.33	.8	3.096	.01
(b)	.67	1.17	3.130	.01
(e)	1.11	.67	2.739	.01
(f)	.44	1.0	3.238	.01

TABLE C (i)

DIFFERENCES IN MEAN PREFERENCES FOR SCHOOL SUBJECTS
FOR MODERN AND HIGH SCHOOL BOYS AGED 13 and 15 YEARS.

Sub- ject Types	Mean Preference at 13		t (d.f.=37)	P	Mean Preference at 15		t (d.f.=79)	P
	Modern School	High School			Modern School	High School		
(a)	.71	1.33	3.307	.01	1.1	.8	3.271	.01
(b)					.57	1.17	6.224	.01
(c)	1.86	1.28	3.393	.01				
(d)	1.38	.72	3.357	.01	1.82	.97	9.678	.01
(e)	.33	1.11	3.683	.01				
(f)					.2	1.0	9.245	.01

TABLE C (ii)

DIFFERENCES IN MEAN PREFERENCES FOR SCHOOL SUBJECTS
FOR MODERN AND HIGH SCHOOL GIRLS AGED 13 and 15 YEARS.

Sub- ject Type	Mean Preference at 13		t (d.f.=49)	P	Mean Preference at 15		t (d.f.=87)	P
	Modern School	High School			Modern School	High School		
(a)	.83	.25	3.397	.01	.81	.5	3.412	.01
(c)	1.22	1.68	3.541	.01	1.07	1.46	5.236	.01
(d)	1.52	1.22	2.323	.02	1.49	1.26	3.542	.01
(e)	1.17	1.71	4.127	.01	1.23	1.7	7.168	.01
(f)					.26	.56	2.970	.01
(g)	.17	.75	3.283	.01	.91	.22	6.778	.01

TABLE D (i)

DISTRIBUTION OF HIGH AND MODERN SCHOOL BOYS
ACCORDING TO INTELLIGENCE.

Type of School	Age	Intelligence Level			Total
		Below-Average	Average	Above-Average	
High	13	0	2	16	18
Modern	13	6	17	4	27
TOTAL	13	6	19	20	45
High	15	0	9	21	30
Modern	15	28	20	3	51
TOTAL	15	28	29	24	81

TABLE D (ii)

DISTRIBUTION of HIGH AND MODERN SCHOOL GIRLS
ACCORDING TO INTELLIGENCE.

Type of School	Age	Intelligence Level			Total
		Below-Average	Average	Above-Average	
High	13	0	9	19	28
Modern	13	5	18	0	23
TOTAL	13	5	27	19	51
High	15	1	12	33	46
Modern	15	16	26	3	45
TOTAL	15	17	38	36	91

TABLE E (i)

PREFERENCE INDICES FOR SCHOOL CLUBS FOR BOYS AND GIRLS
AGED 13 and 15 GROUPED ACCORDING TO LEVEL OF INTELLIGENCE.

Type of Club	Preference Indices									
	Boys Aged 13		Boys Aged 15			Girls Aged 13		Girls aged 15		
	Intelligence Av.	Above Av.	Below Av.	Intelligence Av.	Above Av.	Intelligence Av.	Above Av.	Below Av.	Av.	Abv. Av.
(a)	15	17	28	27	35	26	16	43	24	16
(b)	56	47	86	54	46	35	11	27	14	8
(c)	13	12	3	9	21	1	2	2	6	10
(d)	9	17	14	24	1	4	28	14	9	18
(e)	11	13	6	10	10	38	30	8	36	28
(f)	9	22	14	9	18	41	51	38	40	58
(g)	9	18	6	13	14	1	7	10	2	6
(h)	56	42	32	53	50	46	47	57	68	57

TABLE F (i)

PREFERENCE INDICES FOR SPORTS OF BOYS
AGED 13 AND 15.

Rank Order at 13		Rank Order at 15	
Football	39	Football	40
Swimming	19	Cricket	25
Cycling	15	Swimming	17
Cricket	14	Ice-Skating	13
Athletics	13	Cycling	11
Basketball	11	Athletics	11
Fishing	11	Tennis	11
Ice-skating	10	Basketball	9
Soccer	10	Fishing	9
Tennis	6	Yachting	8
Baseball	6	Soccer	7
		Boxing	7
		Baseball	5

TABLE F (ii)

PREFERENCE INDICES FOR SPORTS
OF GIRLS AGES 13 & 15.

Rank Order at 13		Rank Order at 15	
Swimming	34	Ice-skating	33
Basketball	28	Basketball	29
Ice-skating	25	Dancing	21
Dancing	16	Tennis	16
Baseball	14	Swimming	14
Hockey	9	Hockey	11
Cycling	8	Badminton	8
Athletics	8	Baseball	7
Tennis	6	Country- dancing	7
Country-Dancing	5	Gymnastics	7
		Softball	6

TABLE G (i)

PREFERENCE INDICES FOR SPORTS FOR BOYS AGED 13 AND 15
GROUPED ACCORDING TO (a) SCHOOL AND (b) INTELLIGENCE.

SPORT	High School		Modern School		Intelligence Level					
	Age 13	Age 15	Age 13	Age 15	Av. *	At 13 Av.	At 13 Av.	At 15 Av.	At 15 Av.	At 15 Av.
Athletics	7	14	14	11	*	19	12	9	11	13
Basketball	15	13	9	6	-	-	15	7	6	15
Baseball	6	-	6	8	-	-	-	10	4	-
Boxing	-	-	7	10	-	7	-	6	13	-
Cricket	13	28	12	23	-	17	12	20	30	24
Cycling	13	-	16	16	-	13	17	23	8	-
Football	32	33	43	44	-	46	23	36	42	42
Fishing	11	4	11	11	-	6	17	16	6	4
Ice-skating	13	10	7	14	-	11	8	21	10	7
Soccer	15	10	6	5	-	-	13	4	8	10
Swimming	20	18	19	17	-	11	30	15	19	18
Tennis	15	23	-	-	-	-	-	-	11	22
Yachting	-	8	-	8	-	9	-	9	6	10

* Group too small to justify inclusion.

TABLE G (ii)

PREFERENCE INDICES FOR SPORTS FOR GIRLS AGED
13 AND 15 GROUPED ACCORDING TO (a) SCHOOL and
(b) INTELLIGENCE.

SPORT	High School		Modern School		Intelligence Level					
	Age 13	Age 15	Age 13	Age 15	At 13		At 15			
					Av. x -	Av. +	Av. +	Av. -	Av. +	Av. +
Athletics	7	4	8	5	-	11	5	6	2	8
Basketball	25	14	36	46	-	30	23	52	35	11
Baseball	5	6	25	10	-	17	-	17	8	3
Dancing	15	28	17	22	-	16	18	28	19	29
Cycling	10	4	6	3	-	5	14	2	6	3
Country Dancing	6	11	4	3	-	1	8	-	6	11
Gymnastics	6	7	2	8	-	5	4	12	7	6
Hockey	15	18	2	6	-	4	23	6	10	17
Ice-Skating	37	29	12	41	-	22	46	35	36	32
Ski-ing	12	1	6	1	-	12	7	3	-	2
Swimming	36	13	32	16	-	38	46	13	18	11
Tennis	10	27	3	5	-	6	9	3	10	30

TABLE Hi)

TYPES OF ACTIVITIES PREFERRED BY BOYS AND GIRLS AGED 13 AND 15.

Description of Activity	Percentage Preferring			
	Boys 13 (N=43)	Girls 13 (N=50)	Boys 15 (N=69)	Girls 15 (N=89)
1. Very active-requiring much physical exertion	61	58	67	59
2. Active (but not so much as 1.)	28	38	29	41
3. Requiring little physical activity	9	0	4	0
4. No games	2	4	0	0

TABLE H(ii)

INTEREST IN TEAM AND NON-TEAM GAMES SHOWN BY
BOYS AND GIRLS AGED 13 AND 15.

Games requiring:	Percentage Preferring			
	Boys 13 (N=34)	Girls 13 (N=50)	Boys 15 (N=69)	Girls 15 (N=89)
1. Big teams	54	26	61	33
2. Small teams or groups	24	24	8	17
3. Few or no other players	9	50	31	50

TABLE H(iii)

PREFERENCE INDICES FOR NON-SPORT ACTIVITIES
OF BOYS AND GIRLS AGED 13 AND 15.

Type of Activity	Boys 13 (N=45)	Girls 13 (N=51)	Boys 15 (N=74)	Girls 15 (N=92)
Collecting	23	18	30	7
Dramatics	8	18	3	12
Cinema	51	28	47	36
Gardening	18	12	19	7
Playing Musical Instrument	19	26	20	31
Listening to Radio	31	17	27	26
Reading	33	31	39	35
Singing	13	18	3	20
Knitting	-	8	-	12
Sewing	-	20	-	14

TABLE J (i)

PREFERENCE INDICES FOR SPORT AND NON-SPORT
ACTIVITIES OF BOYS AGED 13 AND 15 GROUPED
ACCORDING TO INTELLIGENCE.

	Preference Index				
	Age 13		Age 15		
	Intelligence Level		Intelligence Level		
	Avg.	Above Avg.	Below Avg.	Avg.	Above Avg.
Reading	5	28	7	15	30
Sport	77	68	67	87	69
Talking	-	-	-	-	-
Daydreaming	4	-	-	-	-
Pictures (Cinema)	25	23	32	32	17
Dancing	9	5	13	3	13
Radio Listening	11	19	9	4	7
Hobbies	42	44	42	52	52
Playing Musical Instrument	4	13	9	8	5

TABLE J (ii)

PREFERENCE INDICES FOR SPORT AND NON-SPORT ACTIVITIES
OF GIRLS AGED 13 AND 15 GROUPED ACCORDING TO INTELLIGENCE.

	Preference Index				
	Age 13		Age 15		
	Intelligence Level		Intelligence Level		
	Avge.	Above Avge.	Below Avge.	Avge.	Above Avge.
Reading	28	57	15	33	32
Sport	44	33	47	51	57
Talking	-	7	-	2	1
Daydreaming	1	-	-	1	-
Pictures (Cinema)	23	9	37	32	19
Dancing	23	33	53	33	46
Radio Listening	18	6	17	13	6
Hobbies	28	26	7	12	18
Playing Musical Instrument	26	22	25	22	9

TABLE K.

SOCIAL, HETEROSEXUAL AND PERSONAL INTERESTS -
MEAN SCORES AND THEIR DIFFERENCES FOR BOYS AND
GIRLS AGED 13 AND 15 YEARS.

INTEREST	Mean Score Girls 13	Mean Score Boys 13	d.f.	t	P	Mean Score Girls 15	Mean Score Boys 15	d.f.	t	P
Social	12.4	11.53	104	1.014	*	13.5	11.2	166	4.052	.01
Hetero- sexual	11.0	9.4	104	1.63	*	14.34	10.0	166	6.044	.01
Personal	14.6	16.83	104	2.724	.01	17.88	18.74	166	1.469	*
	Mean Score Girls 13	Mean Score Girls 15				Mean Score Boys 13	Mean Score Boys 15			
Social	12.4	13.5	149	1.658	*	11.53	11.2	121	.4399	*
Hetero- sexual	11.0	14.34	149	3.873	.01	9.4	10.0	121	.7607	*
Personal	14.6	17.88	149	4.69	.01	16.83	18.74	121	2.745	.01

* Indicates 'not significant'.

TABLE L.

AVERAGE OF PUBESCENCE OF BOYS AND GIRLS AS
REPORTED BY SEVERAL INVESTIGATORS.

INVESTIGATOR	Date of Report	Number of Children	Average Age of Pubescence
Crampton	1908	3835 boys	13.4
Baldwin	1916	3600 boys	14.4
Baldwin	1916	(country) 1317 boys	13.9
Dimock	1937	(city) 1406 boys	13.08
Baldwin	1921	-girls	13.7 -13.9
Gould & Gould	1932	680 girls	13.61
Boas	1932	-girls	13.1

TABLE M (i)

READING INTERESTS OF BOYS AGED 13 AND 15.

Reading Interest	Preference Index	
	At 13	At 15
Detective Stories	29	21
Directions for making things	21	25
Adventure Stories	21	28
Mystery Stories	17	21
Encyclopedias	14	12
Nature and Animal Stories	13	9
Mechanics	12	12
Comics	11	16
History	10	-
Science	7	6
Historical Novels	5	10
Magazines	5	10
Love Stories	-	6
Travel	-	6

TABLE M (ii)

READING INTERESTS OF GIRLS AGED 13 AND 15.

Reading Interest	Preference Index	
	At 13	At 15
Adventure Stories	36	24
Home & School Syories	28	19
Love Stories	24	36
Mystery Stories	22	32
Nature & Animal Stories	15	13
Comics	15	13
Folk-tales	12	-
Classics	9	-
Detective Stories	8	17
Encyclopedias	7	-
Magazines	-	6
Short Stories	-	5
Historical Novels	-	5

TABLE N (i)

READING INTERESTS OF BOYS AGES 13 AND 15 GROUPED
ACCORDING TO INTELLIGENCE.

Reading Interests	Preference Index				
	At 13		At 15		
	Avg.	Avg +	Avg -	Avg.	Avg +
Encyclopedias	5	18	12	10	13
Nature and Animal Stories	17	11	4	13	7
Love stories	-	-	12	10	-
Historical Novels	3	9	-	6	13
Adventure stories	8	33	29	24	42
Mystery stories	7	30	28	16	22
Short stories	-	9	2	7	3
Science	10	-	3	4	15
Mechanics	15	7	22	10	3
Travel	-	-	-	1	17
Detective stories	35	28	9	32	18
Comics	15	6	26	17	2
History	17	-	-	-	-

TABLE N (ii)

READING INTERESTS OF GIRLS AGES 13 AND 15
GROUPED ACCORDING TO INTELLIGENCE.

Reading Interests	Preference Index				
	At 13		At 15		
	Avge.	Avge +	Avge -	Avge.	Avge +
Directions for making things	-	7	-	-	7
Home & School stories	28	25	11	17	26
Nature & Animal Stories	10	23	16	9	17
Love stories	30	19	54	39	22
Historical Novels	-	-	-	-	11
Adventure stories	36	40	23	29	19
Mystery Stories	23	23	28	31	34
Short Stories	-	-	7	9	4
Travel	-	-	-	4	6
Detective Stories	10	5	12	17	20
Comics	17	7	21	13	7
Magazines	-	-	12	4	7

TABLE P
PREFERRED POSITION IN TEAM.

Position.	P e r c e n t a g e P r e f e r r i n g											
	Boys at Age 13 Level of Intelligence			Boys at Age 15 Level of Intelligence			Girls at Age 13 Level of Intelligence			Girls at Age 15 Level of Intelligence		
	Below Avge.	Avge.	Above Avge.	Below Avge.	Avge.	Above Avge.	Below Avge.	Avge.	Above Avge.	Below Avge.	Avge.	Above Avge.
(a) Captain	43	30	37	15	43	13	71	42	55	44	30	25
(b) Other Team Member	57	55	47	81	57	78	29	46	39	56	67	72
(c) Manager	-	5	11	4	-	4.5	-	4	-	-	-	-
(d) Umpire	-	10	5	-	-	4.5	-	8	6	-	3	3

DEPARTMENT OF PSYCHOLOGY.QUESTIONNAIRE: Adolescent Interests and Activities.

NAME (in full).....Sex: Male/Female

AGE.....yrs.....mths. Date of birth.....

SCHOOL.....CLASS.....

PART I. ACADEMIC.

1. The subjects you study at schools have been divided into seven different groups. Put the number 1 in the brackets against the group you like best, 2 against the group you like next best, 3 against the group you like next best, and so on. You need not mark every group. (Note: The subjects mentioned in the brackets do not include every subject in the group. They are merely examples of the group.)

- (a) Subjects which give you an opportunity for solving problems abstractly (e.g. arithmetic, algebra, physics, applied maths, economics) ()
- (b) Subjects which give you an opportunity for solving problems concretely, i.e. using real materials (e.g. chemistry). ()
- (c) Subjects which help you to realise and understand the life, problems, culture, etc. of your own and other nations (e.g. english, history, geography, social studies). ()
- (d) Subjects which require practical work with your hands (e.g. cooking, carpentry, sewing, blacksmithing). ()
- (e) Subjects which give you an opportunity to express yourself or your own ideas and feelings (e.g. art, dramatic work, english expression, debating, singing). ()
- (f) Subjects which enable you to have a better understanding of the natural world you live in (e.g. geology, zoology, biology, nature study, chemistry, physics). ()
- (g) Subjects which are meant primarily to prepare you for a particular kind of job (e.g. typing, bookkeeping, trades courses, shorthand) ()

2. If you had to join some kind of club at school, which kind would you prefer. Number the list in order of preference. The names in brackets are merely examples and do not include all the possible names of school clubs.

- (a) A club primarily interested in collecting things (e.g. stamps, film star photos) ()
- (b) " " " in constructing things (e.g. model planes and yachts, knitting, craft work). ()
- (c) " " " in discussing problems (e.g. debating, political). ()
- (d) " " " giving you a chance for self-expression (dramatic, craftwork) ()
- (e) " " " in enjoyment of the arts (e.g. music, playreading, sketching) ()
- (f) " " " in providing social enjoyment (e.g. dancing, excursions) ()
- (g) " " " in study of natural science (e.g. field naturalists) ()
- (h) " " " in providing physical activity (e.g. walking, skating). ()

PART II. SPORT.

1. Choose and number in order of preference any of the following sports and games that you enjoy or would like to be able to take part in:-

athletics.	()	meccano.	()
basket ball.	()	rugby.	()
base ball.	()	rowing	()
badminton.	()	roller skating	()
ballroom dancing	()	soccer	()
boxing	()	softball	()
billiards.	()	sunbathing	()
cricket.	()	skiing	()
cycling.	()	swimming	()
country dancing.	()	squash	()
chinese checkers	()	tennis	()
card games	()	volley ball.	()
(bridge, solo, etc.)		wrestling.	()
chess.	()	yachting	()
draughts	()	table tennis	()
football	()		()
fishing.	()		()
golf	()		()
gymnastics	()		()
hockey	()		()
ice skating.	()		()
lacrosse	()		()

Add any that are not included on this list, and put the number of your preference against them.

2. Number in order of preference any of the following things you do like to do, or would like to do:-

() collecting	() playing a musical instrument
() dramatics	() listen to the radio
() going to cinema or theatre shows	() reading
() gardening	() sewing
() knitting	() singing

3. Out of all the things mentioned in both questions 1 and 2, above, write down the three you like best, putting the one you like best first, then the next best liked, and then the next.

- (a)
(b)
(c)

4. If you could play successfully any sport you chose, which one would you usually prefer? Show by a tick in the brackets at the end of the line.

- (a) to play a sport (or sports) where you would be a member of a big team (e.g. hockey, football) ()
(b) to take part in a game (or games) requiring only a few players (e.g. tennis doubles, volley ball) ()
(c) to take part in a sport or pastime where you could play alone or practically alone (e.g. golf, walking, tennis singles, draughts, meccano, boxing, skating, cycling). . . ()

3.

Adolescent Interests and Activities (contd.)
Part II, Sport. (contd)

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5. If you could play all games and sports equally well, which one would you prefer? Show by a tick in the brackets at the end of the line.
- (a) games and sports that require plenty of energy and activity (e.g. football, athletics, hockey) ()
 - (b) games and sports that do not require so much energy (e.g. softball, fishing, table tennis, yachting) ()
 - (c) games that require a high degree of abstract reasoning and solving of problems (e.g. chess, billiards) ()
 - (d) no games or sports at all ()
6. In a game that you could play very well, which one would you prefer to do?
- (a) to take part in matches, sporting fixtures, carnivals etc ()
 - (b) to be a spectator at " " " " " ()
7. In a game you could play particularly well, which one would you prefer to be?
- (a) the captain of the team ()
 - (b) some other member of the team ()
 - (c) the manager of the team ()
 - (d) the umpire. ()

PART III. READING.

1. In the brackets, number in order of preference the types of books you like best to read. You need not number all the types but you may number as few or as many as you wish:

- () directions for doing or making things
- () encyclopedias and books of knowledge
- () stories of home and school life
- () nature and animal stories
- () love stories
- () folk tales and legends
- () historical novels
- () adventure stories
- () nonsense stories
- () mystery stories
- () short stories
- () philosophy
- () biography
- () classics
- () history
- () science
- () mechanics
- () travel
- () poetry
- () plays
- () detective and crime stories
- () comics
- () magazines

2. If all your leisure time for one week had to be spent on one activity, which of the following would you prefer? Number three choices in order of preference:

- () to read
- () to take part in a sport or game
- () just to sit about and talk
- () just to sit about and daydream
- () to go to the pictures
- () to go dancing
- () to listen to the radio
- () to work at a hobby
- () to play a musical instrument

Adolescent Interests and Activities (contd.)

PART IV. SOCIAL.

Below is a list of questions about things to do in your free time. Put a cross (X) in the column under Yes or No, according to which of these is true for you. If you cannot decide whether to say Yes or No put a cross (X) in the ? column instead.

	<u>Yes</u>	<u>No</u>	<u>?</u>
1. Do you go to dances?
2. Do you enjoy going to dances?
3. If you don't go to dances would you like to be able to go?
4. Do you belong to any organisation such as Girl Guides Boy Scouts, Youth Club, Church Club?
5. If you don't already belong to such an organisation would you like to do so?
6. Do you go to formal social functions such as Balls?
7. Do you enjoy going to such functions?
8. If you have not been able to go to such formal social functions, would you like to be able to go?
9. Do you enjoy having guests come to your house?
10. If you do not have the opportunity at present of entertaining your friends at home, would you like to be able to do so?
11. Would you usually prefer to go to a picnic with just a few friends of your own age whom you know well, than to go with a big crowd of your own age most of whom you know fairly well?
12. Would you usually prefer to go for a picnic with your own family than with a number of your friends?
13. Would you usually prefer to read a book than to go to a dance or social?
14. Would you usually prefer to go to a play than to go to a dance or social?
15. Do you go often to your friends' homes?
16. Would you like to go more often to your friends' homes?
17. Do you usually like being with a crowd of companions better than being with just one or two friends?
18. Would you usually prefer to spend an evening quietly at home than to go out with your 'gang' or group of companions?

PART V. Answer in the same way as for Part IV.

1. Do you think it preferable that boys and girls should go to different schools?	...	...	...
2. Do you think it preferable that boys and girls should be in separate classes at school?	...	...	...
3. Do you prefer all your friends and companions to be of your own sex?	...	...	...
4. Do you like to flirt?	...	...	...
5. Would you enjoy going to a party where only guests of your own sex were present better than going to a party where both boys and girls were present?	...	...	...
6. Do your parents think you are too interested in friends of the opposite sex?	...	...	...
7. Do your teachers think you are too interested in friends of the opposite sex?	...	...	...
8. Do you feel embarrassed when you pass a group of girls you don't know very well?	...	...	...

Adolescent Interests and Activities (contd.)

	<u>Yes</u>	<u>No</u>	<u>?</u>
9. Do you feel embarrassed when you pass a group of boys you don't know very well?
10. Do you find it easy to make friends of the opposite sex?
11. Is there any particular person of the opposite sex you like having as a friend?
12. Is there any particular person of the opposite sex you want to have as a friend?
13. Would you like to have more friends of the opposite sex?
14. Do you like to read romantic stories?

PART VI. Answer in the same way as for Parts IV and V.

GIRLS ONLY.

1. Do you use cosmetics?	...	...	...
2. If you do <u>not</u> use cosmetics, would you like to do so?	...	...	...
3. Do you like to wear evening dress to a formal night entertainment?	...	...	...
4. If you do <u>not</u> wear evening dress, would you like to do so?	...	...	...
5. Do you like to experiment with different hair styles?	...	...	...
6. Do you spend very much time on personal grooming such as brushing your hair, cleaning your nails, arranging your dress?	...	...	...
7. Do you choose your own clothes?	...	...	...
8. If you do <u>not</u> choose your own clothes, would you like to do so?	...	...	...
9. Do you worry about whether your clothes look fashionable?	...	...	...
10. Are you frequently told to wash your hands or clean your fingernails?	...	...	...
11. Are you particular about your own table manners?	...	...	...
12. Do you take notice of other people's table manners?	...	...	...
13. Are you frequently told to tidy your hair or your clothes?	...	...	...
14. Do you like to wear jewellery?	...	...	...
15. Would you like to wear more jewellery?	...	...	...
16. Do you usually try to make sure that your clothes match?	...	...	...

BOYS ONLY.

1. Do you use hair oil?	...	...	...
2. If you do <u>not</u> use hair oil, would you like to do so?	...	...	...
3. Do you like to wear evening dress or best clothes to a formal night entertainment?	...	...	...
4. If you do <u>not</u> wear evening dress or your best suit, would you like to do so?	...	...	...
5. Do you like to have your clothes well pressed?	...	...	...
6. If no one could press your suit for you, would you do it yourself?	...	...	...
7. Do you like to choose your own socks and ties?	...	...	...
8. If you do <u>not</u> choose your own socks and ties, would you like to do so?	...	...	...
9. Do you care about how your clothes look?	...	...	...
10. Are you frequently told to wash your hands and clean your fingernails?	...	...	...
11. Are you careful about your table manners?	...	...	...
12. Do you take notice of other people's table manners?	...	...	...
13. Are you frequently told to tidy your hair or your clothes?	...	...	...
14. Do you like to wear fancy ties and pullovers?	...	...	...
15. If you do not wear fancy ties and pullovers, would you like to do so?	...	...	...
16. Do you like to have the colours in your clothes (e.g. socks, tie, shirt) matching?	...	...	...

6.

1. Using both the lists for question 1 and 2 on Page 2. of the Questionnaire, write below here the names of the 6 activities that you really do play or do most often

- 1.....()
- 2.....()
- 3.....()
- 4.....()
- 5.....()
- 6.....()

2. Put a tick against any of these that you do alone.

3. Put a tick against the one which best fits you:

(a) I usually prefer to watch games and sports. ()

(b) I usually prefer to play in games and sports. ()