Durham University

Durham E-Theses

The influence of music on the retarded child

Dobbs, Jack Percival Baker

How to cite:

Dobbs, Jack Percival Baker (1954) *The influence of music on the retarded child*, Durham theses, Durham University. Available at Durham E-Theses Online: http://etheses.dur.ac.uk/9973/

Use policy

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a link is made to the metadata record in Durham E-Theses
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the full Durham E-Theses policy for further details.

Academic Support Office, The Palatine Centre, Durham University, Stockton Road, Durham, DH1 3LE
e-mail: e-theses.admin@durham.ac.uk Tel: +44 0191 334 6107
http://etheses.dur.ac.uk

THE INFLUENCE OF MUSIC ON THE RETARDED CHILD.

The copyright of this thesis rests with the author. No quotation from it should be published without his prior written consent and information derived from it should be acknowledged.

ACKNOWLEDGMENTS.

The writer wishes to acknowledge the help and advice given to him during the period of the investigation by Miss Dorothy Shutt of the Durham University Institute of Education, Mr. E. A. Hewitt, B.A., of the Durham Colleges' Education Department, Dr. F. Hudson of the King's College Music Department, Mr. J. J. Grant, M.A. Ed.B., of Fourah Bay College and the Head Master and Head Mistress of the Modern Schools concerned in the investigation.

C O N T E N T S

Chapter I.

The Place of Music in the Education of the Child.

Ever since Music was "recognised" as worthy of inclusion in the schemes of work of the Board of Education Schools eighty-two years ago, it has been struggling to occupy its rightful place in the school curriculum and within the educational system of the country. This status has been generally accorded it by serious educationists during the past twenty years and it is no longer treated as an heirloom to be exhibited on festive occasions and then returned to its lumber room until the next celebration demands its spring clean. Nor are its devotees now expected to appropriate a foreign name as a justification for their wayward locks and casual habits, or to play party pieces from which fond relatives would prefer to be spared. The conception of music and musicians has changed with evolving social conditions and educational progress, and one rarely encounters the attitude epitomised in the following extract from the Introduction to "Recent Developments in School Music", issued by the Board of Education in 1933:- 94

"When a famous Master of Trinity politely asked of an undergraduate, who had announced his intention of reading Music, if he proposed also to take Dancing, he achieved something more than a polished sarcasm: in one brief implication he defined, for the benefit of posterity, the attitude of the

earnest mid-Victorian educationalist towards Music. He conceived of it as a soft dalliance for an idle hour, unworthy of serious study by right-thinking public school and university men and therefore quite outside the solemn routine of Classics and Mathematics which was illogically termed a liberal education."

One has only to recall the Greek and Mediæval conception of the "Liberal Arts" to appreciate into what low esteem Music had fallen as a medium for the education of responsible citizens during the course of the intervening centuries.

A welcome change of opinion at the highest level and a new recognition of the value of music as an integral factor in both school and social life has been apparent in many recent reports sponsored by the Government of the day, and was concisely expressed in the McNair Report of 1944:-

"Building on the spontaneous response of all young children to music, whether they respond to it in rhythmic movement or use it as a vocal outlet for simple emotions, the function of music teaching in school should be to provide for its continuous development as a means of expression and source of enjoyment through life. It should furnish all children with healthy tastes, most children with simple vocal skill and many with instrumental practice; and the exceptionally gifted should be afforded suitable facilities and teaching up to any degree of proficiency."

Although the conception of the musician as an innocuos but

slightly eccentric member of the community is disappearing, the idea lingers - and in some Continental Countries is emphasised - that music is essentially for the "gifted", and that to provide others with facilities for its practice is to cast pearls before swine. Such a belief inevitably raises the class-teacher question whether the time given to the whole class in general music training could be spent more profitably by a number of children on utilitarian pursuits producing more immediate results. It is an attitude which has been fostered - albeit unwittingly - by the visiting music teacher, who, because of the conditions of his appointment, can never participate fully in the general educational activities of the school, and because of his own exclusively musical training, regards all his charges as potential musicians worthy of serious attention only when they reveal musical promise - particularly as executants.

Recent educational research challenges this assumption that a clear-cut division exists between the musically talented and the "rest".

In their investigations into the general distribution of musical capacity amongst American children Dr. Hazel Stanton and Professor Carl Seashore, using a six-point scale of classification, found that of all the subjects tested, 10% were classified "A", 20% "B", 20% "C+", 20% "C-", 20% "D" and 10% "E".[48] [53]

Dr. Herbert Wing, using different tests in Great Britain, discovered that 10% of the children he tested had marked capacity,

10% very little aptitude, and that the middle 40% showed small deviation from the mean. His results also suggested that while the top 10% were good in all the tests and the bottom 10% were poor in all of them, the middle group subjects were not average in all, but good in some and poor in others. The investigations of both Wing and Seashore revealed that the deviation of capacity within the central 80% in the early years of the child's life was negligible for teaching purposes.

A practising music-teacher, Noel Hale, now Organiser of Instrumental Music to the Bournemouth Education Authority, suggests that pupils classified into three groups at an early age - (x) those showing promise well above average, (y) those with only average ability and (z) those with no appreciable sense of music - would probably fit into their categories in the following proportions: (x) 20%, (y) 70%, (z) 10% and bases this classification on his experiences at schools in the Southern Counties between 1930 and 1940.[25]

All of these conclusions agree in fixing the percentage of children with seriously limited musical ability as only 10%.

The class teacher, then, is justified in planning his general music scheme on the assumption that a large proportion of the children in each of his classes have enough musical ability - of varying quality and quantity - to benefit from much of the training provided. If the experiences and activities offered are sufficiently comprehensive some of the children will show aptitude for most of

them and most of the children for some of them. Especially is this true in the early stages. A minority lack the ability to benefit from music as a language, but no satisfactory objective test has yet been devised to estimate how much genuine enjoyment even these children may derive from participation in the musical activities of the class.

Such considerations suggest that music should take its place as a valid medium in the general education of the child as well as an art worthy of study in its own right by potential musicians. It is not an extra to be attached somewhat precariously to the main body of subjects in the time table and not "extraneous or exclusive to the few with very special intellect and extra special financial means". Rather is it an integral part of the school's activities to be given an adequate allowance of time and a status appropriate to its worth.

Before any subject is taught, the understanding of at least two things is essential: the content of the subject itself and the learning processes of the child's mind, conditioned as they are by the emotional nature and social background of the child.

Music, the subject itself, will be our first consideration.

Chapter II.

The Elements of Music.

There are a limited number of elements which are essential to an intelligent understanding of, or participation in, music of any sort. Unless a child has the capacity to perceive, in however limited a degree, these fundamentals, a musical education is denied him, and in his general all-round education music can play no vital part.

Seashore[66] names as the basic capacities the sense of pitch, the sense of time, the sense of loudness and the sense of timbre, and considers that these elemental capicities are largely inborn and function from early childhood. Of these, the two of prime importance are pitch and rhythm ("sense of time"), for without them the creation or understanding of even the simplest melody is impossible.

Frequent confusion of thought is caused by the varied use of technical terms by scientists, psychologists and musicians. About the meaning of the term "pitch" there is more general agreement.[3] ""Pitch" is the exact height (or depth) of any musical sound according to the number of vibrations that produce it." Although pitch is dependent on the frequency of vibrations, the sensation of pitch is the result of individual experience, and not until the mind is brought to bear upon the purely physical stimulant can we have a sense of pitch as it is understood by a musician.

The terms "highness" and "lowness", "height" and "depth", and less frequently, "acuteness" and "gravity" which are adopted by musicians to distinguish between the various frequencies, and which originated presumably from the graphic representation of note movement upon a staff, must be taught systematically to children entering school. At the secondary stage it may fairly be assumed that they are sufficiently familiar to carry with them the conventional musical associations.

The fact that one possesses a good sense of pitch does not necessarily imply that one will be a priori a talented musician, but without it no foundation exists upon which a musical training can be built.

Even amongst musicians there exists considerable confusion of thought about the terms: "time", "tempo", "pulse", and "rhythm", the one generic term, "Rhythm", often being used to embrace them all, either separately or in combination. Still greater liberty is taken by the general public in their adoption of this term, and "Rhythm Clubs" now represent the very antithesis of all that the word truly means.

It is derived from a Greek word ῥυθμός meaning "measured motion" and implying "flow". This is the sense in which the musician uses it, to convey the conception of movement to and from points of climax and repose. Within itself it embraces the lesser measure of pulse and the larger groupings of phrases

and sentences. Rhythm gives vitality to music, and without it we have the monotony paradoxically termed a "Rhythm Number" in which one regular time-pattern is insisted upon ad nauseam and all sense of progression is absent.

Rhythm is complex and embraces (a) an underlying steady pulse, (b) the regular grouping of that pulse into Duple or Triple Time, (c) the disposal of accentuation, (d) the grouping of bars into phrases or sentences by means of cadences and (e) all of these complementary factors leading to and from climaxes - points of tension and repose.

The musician must be able to feel the underlying pulse of the music, then understand the "time-patterns" or "rhythmic groupings", and finally relate both to the overall Rhythm of the section concerned. A person's rhythmic sensitivity is a good indication of his true musicianship.

In order to differentiate between the uses of the same term, "rhythm", for the "part" and for the "whole", the suggestion of Cyril Winn quoted by Wing in his Monograph[63] is adopted in this Thesis: "rhythm" spelt with a small 'r' being used for the smaller time-pattern and "Rhythm" with a capital initial letter being reserved for the whole forward flow of the music.

For most musicians Rhythm is inseparably allied to Pitch, and a sense of both these fundamentals enables the child to hear, experience, appreciate and perform the simple melodies which form the nucleus of his early musical education.

Inherent in the sense of Rhythm is the conception of phrasing. Here musicians and psychologists agree:- "Phrasing is music's life. A musical phrase in certain vital ways corresponds to a verbal phrase in conversation, poetry and literature of all kinds. It is his (the musician's) unit of impulse, of intention, of idea, of meaning....." [16] "The analogy with language is very close. We hear spoken language as sentences or phrases, i.e. meaningful units in sequence, and not as a series of words or syllables; music is read in the same way." [52]

Cadences are the essential punctuation marks. They break the melody and harmony at more or less regular intervals, dividing it into phrases, sentences and sections, as a writer uses various symbols of punctuation in order to give intelligibility and clarity to his thoughts. If the organic design of a work is to be fully appreciated and sensitively interpreted cadences must be clearly understood by both performer and listener.

The ability to comprehend a single melody was the essential requirement of the music lover from the earliest times until about A.D. 850 - 900, for until then music consisted of single lines of notes grouped in rhythmic patterns of various degrees of complexity.

But even at this early stage the sense of "timbre" which Seashore [66] quotes as one of the four basic capacities was necessary

before a musician could discriminate between the sound of a vocal melody and that produced by a primitive pipe. With the rapid technical improvements to instruments and the use by composers of more daring colours in combinationsthe ability to discriminate between timbres of various character has become a desirable attribute for any person who wishes to participate fully in, or listen to, any performance involving vocal or instrumental ensembles.

As the fourth of his musical fundamentals Seashore mentions the "dynamic" aspect, an aspect which often receives little attention because of the comparatively crude indication of intensity which the musical score can show. The usual "dynamics" adopted by musicians range from the softest to the loudest, but they are as relative as are the terms "Andante" and "Presto" when there is no metronome indication.

In the interpretation of music, intensity which involves dynamics, is of vital importance if the dead bones of notation are to live. Indeed, intensity and time are the pianist's two most powerful allies in the shaping of a phrase.

Comparatively early in the recorded history of music (about 900 A.D.) the single line of melody was used in combination with others, with one melody at first and then with several. The "contrapuntal" era had begun, and a musician's ability required expansion to embrace its new possibilities.

It is essential now for any musician to be able to hear at least two melodies being played or sung together, and to be able to distinguish each line sufficiently clearly to reproduce it, either vocally or in writing, as a separate entity. Without such ability his listening is limited to the top (or more rarely, the bottom) line of the composition, whether it be the soprano of a Bach chorale or the first violin of the "Emperor" Quartet. From the intricacies of a Strauss orchestration he will be completely debarred. Nor will he be able to sing his line in any part song, madrigal or canon unless he can hear the parts of the other performers, for although some people contrive to do this with their fingers wedged firmly in their ears, the achievement is in the nature of a vocal battle rather than a serious musical activity, in which the physically fittest, not the most musically sensitive, survive.

From such lines of combined melodies considered horizontally evolved ideas of progressions created by the perpendicular combination of notes inchords, and harmonic writing gradually assumed a position of superiority. Another aural-mental adjustment was required and the musical ability embraced still more factors.

Although the young child seems to be concerned about nothing but the melody, by the time the secondary stage is reached a quite definite harmonic sense has developed and ungainly or crude harmonic progressions cause a visible discomfort to

musical children. For the musician a sense of harmonic fitness, however extravgant the harmony qua harmony may appear, is essential for an appreciation of the structure of both vocal and instrumental music.

In the course of musical history, to the increasing variety of harmonic colour and instrumental texture was added greater complication of Form.

We are physically incapable of absorbing unlimited new ideas and any piece of music which rambles on with no conception of structure will inevitably alienate the intelligent listener and produce a mental fatigue ending in unmitigated boredom. At the other extreme the mere reiteration of one melodic fragment, however beautiful and complete in itself, will equally fail to stimulate and maintain musical attention. The mean between these extremes is a 'degree of change plus a degree of repetition'.

In the early stages of the evolution of musical structure the forms were simple and are exemplified by many of the songs used in school. Now that the radio and gramophone have brought the greatest orchestral work into the classroom and home, a capacity to understand the more complex structure enriches our listening, and although not a guarantee of musical ability, is worthy of cultivation by anyone who wishes to enjoy music to the fullest.

Closely allied to the conception of "form" is that of "key". Much modern music tends to be atonal, but from the latter part of

the 16th century until the beginning of the present one the key used in any particular section was clearly defined and the key system apparent. It is the idiom of the music of this period with which our children will be generally familiar and which we shall use most frequently in our schools.

The feeling of "home" or "doh" is basic to the conception of key and our minds have an ineradicable habit of returning to the tonic and relating it to the other notes of the section. It is the change of position of the "home" or "keynote" that produces a modulation and helps to provide the necessary diversity within the unity of the key scheme.

Although few children of the immediate post-primary stage have much technical knowledge about keys they are usually aware of this "pull" of the tonic and often recognise a modulation even when they are unable to define more explicitly the relation of the new key to that in which the composition began.

The ordinary listener may not feel the lack of such a key-sense, but it will add definition and purpose to critical listening and its development in the child may profitably be stimulated.

Closely associated with the conception of "key" is that of the major and minor modes. A knowledge of the technical structure of these tone patterns is not a mark of musical aptitude, but the ability to distinguish between them implies discernment in, and enrichment of, listening.

These, then, are some of the fundamentals to be understood by the child in whose education music is to play a vital part. They can only be grasped completely and related intelligently to each other by the use of a reliable musical memory.

Memory is of greater importance to the appreciation of music than to that of any other art, for unlike the graphic arts of painting and sculpture, music is essentially transient. It passes before us as it is being played or sung, and it is impossible for us to survey at one and the same time, and in a static manner, all the diverse features which make up the whole. They are heard in isolation and it is only when all have been absorbed that the whole work can be recreated by our own personal synthesis. One of the most treasured possessions of a musician is a good aural memory which enables him to make such a synthesis and to relive, whenever he wishes, his previous vital musical experience.

But a good memory is not necessarily a guarantee of musicianship or musical ability and Seashore reminds us that "while retentive and serviceable memory is a very great asset to a musical person, it is not at all an essential condition for musical-mindedness".

We have examined the elements of the musical language. Our next duty is to devise a comprehensive and progressive music scheme which will introduce them in the most satisfactory manner into our schools.

Chapter III.

The Music Curriculum.

In all our planning we shall consider Music as a language with its own literature.

A child learns to speak its own language by (1) hearing his parents and the older children and adults in his immediate environment speaking it, (2) imitating the sounds he hears, (3) seeing and reading - at a later stage - these sounds printed in the symbol notation of letters and words and (4) expressing himself - at an even later stage - through the written symbols in units of varying length and complexity.

Every language is inextricably bound up with its literature. As soon as a child can understand his language, sometimes before he speaks it and certainly before he begins to read it, he is introduced to such traditional literature as nursery rhymes, and through his early association with these simple forms he gradually grows into a full appreciation of the more complicated structures and ideas. He is also encouraged to experience "joy in the making" by creating "jingles" for himself in however elementary a manner and medium.

There is a close parallel in the learning of music . Musical education should be based on and proceed from, the experience of music itself: expression results from this first hand experience and is inevitably conditioned by the

musical atmosphere into which the young child is introduced. At present few children have as much music as speech directed explicitly towards them, and what they do absorb is often of an inferior quality.

In an ideal music scheme the young child will be encouraged to reproduce vocally large quantities of the music he hears, and to express it through movement and his voice. So that he may not be limited to the reproduction of music he receives from other people he will learn to read musical notation himself and will develop the facility to enlarge his own repertoire as he wishes and to follow the music, vocal or instrumental to which he is listening, from score. Such score-following is one of the best pieces of aural training possible.

As a development from reading will come writing in the conventional musical symbols, - at first the French rhythm names and tonic sol-fa syllables and then staff notation, - as a means of clarifying musical thought, a medium of communication and a method of expressing creative ability. "Music is a language like English or French or German. Like them it communicates ideas by means of conventional signs which have to be learned, and when learned can be understood.....And if we acquire them in early years, before we have come to exaggerate their difficulty, we have placed in our hands the key of a treasure house which experience will show to be inexhaustible."[89]

Recognising that the voice is not the only medium of musical expression for the child, we shall provide opportunities for the learning of an instrument at the earliest possible opportunity, certainly not later than the immediate post-primary stage.

Throughout the scheme only music of the finest quality will be used so that the child constantly comes into contact with the great literature of music and daily has his critical faculties stimulated and fostered. In addition, set times will be reserved for concentrated listening. During these periods our first aim will be not to elaborate "the story behind the music", nor to relate anecdotes about the life of its composer - although details from both may be introduced incidentally, but to help the child to get right inside the music itself, and to experience it as fully as possible. This is an essential piece of training, for we are compelled to recognise the fact (albeit reluctantly) that only a small proportion of our children, will ever join choral societies and orchestras or participate in any other form of music-making when they leave school. Their only contact with music will be through listening to it in one of its manifestations. From this they cannot escape.

As the Cambridgeshire Report "Music and the Community" 1933 aptly says: "Probably the commonest feature of musical life in the homes of today is the presence of the gramophone or wireless set..... The mechanical reproduction of music is so easy that many people

are tempted to regard these instruments merely as toys. Music - of some kind or other - can be turned on for any length of time. The dangers of making it available for everybody at all times are very real. If music is heard under the wrong conditions, it becomes merely an irritant to the nerves which may do us mental and nervous harm without any benefit or pleasure. Mechanical music should be turned on only when people are willing to listen to it in silence or when it serves some definite subsidiary purpose; the moment attention begins to wane and the music loses its interest, it should be cut off, so that the ear and nerves have rest". The more we can convert the children's passive acceptance of sounds into an active, intelligent and critical listening to music, the more real satisfaction and lasting pleasure will they derive from their leisure hours.

It is desirable at the secondary stage for the music lessons to be given in a special room set aside solely for the cultivation of music. Here all the necessary equipment, books, scores and sheet copies can be kept, but even more important than the convenience such an arrangement ensures is the musical atmosphere which can be created here over a period of time, and which often has a greater influence on the general educational development of a child than is imagined. In this room pleasurable activities are expected, and to it the child can go in his free time to absorb the atmosphere of restraint and quiet beauty which is perhaps denied to him in his own home.

Chapter IV.

Retarded Children* and the Place of Music in their Education.

We have examined our subject - Music - and our scheme for its teaching in the school curriculum. Our next concern is with the children to whom it is to be introduced and in whose education we believe it to be a powerful factor.

Their general intelligence varies considerably and may appear to bear no relation to their musical ability. At one extreme we find "superior" children with Intelligence Quotients over 120; at the other, children whose I.Q.s of below 70 place them in the Group classed before the 1944 Education Act as "feeble-minded" or "mentally defective", liable to be educated in special schools. As accommodation is limited in these schools some of the children remain to swell the ranks of the "dull, retarded and backward" groups usually referred to by practising teachers as the "C's".

Backward children are divided into three categories by the generally accepted practice of Intelligence Quotient assessment:-

* Throughout this thesis the term "retarded" is used to embrace all children who, because they lag appreciably behind their fellows in the standard of work they produce at school, require special attention and teaching. Although the vast majority of these are backward apparently because of innate dullness (and it is with these that this thesis is primarily concerned), amongst them will always be found a few temporary visitors whose retardation is more difficult to analyse and define. It may be the result of some aspect of health or environment, or the fact that their general intelligence has not yet been sufficiently stimulated to assert itself. Whatever its cause, such retardation need only be temporary.

(i) 85 - 70. I.Q: - Dull

(ii) 70 - 50. I.Q: - Feeble minded or mentally defective, educable in special schools

(iii) Below 50. I.Q: - Ineducable in either ordinary or special schools.

Children in category (iii) do not concern us immediately. A large proportion of those in category (ii) will be our responsibility at some time or another, and those in category (i) will always be with us, usually in the same building (and sometimes in the same room) as those children whose Intelligence Quotients are average and above.

Since the 1944 Education Act all classes of backward children have been grouped under the single heading of "educationally subnormal" and the Ministry of Eduction in its pamphlet "Special Educational Treatment (1946)" suggests as a criterion, "a standard of work below that achieved by average children 20% younger". The label "educationally subnormal" embraces children who are retarded both because of dullness or mental deficiency and because of such specific disabilities as impaired sight, frequent change of school or emotional difficulties.

The proportion of them may vary widely from one area to another, but all investigators agree that the largest number come from areas in which the poorer types of home - both financially and culturally - are in the majority.

The 1932 survey of the intelligence of Scottish children carried out by the Scottish Council for Research in Education estimates that 3% to 4% of children have Intelligence Quotients of less tha

70, and 24% Intelligence Quotients between 70 and 90. A further survey undertaken by the same Council[104] in 1947 agrees substantially with the findings of the earlier report. The report of the Mental Deficiency Committee,[97] (1929), states that "Investigations by competent educational psychologists have shown that at least 10% of the children attending Public Elementary Schools are two or more years retarded educationally," and the Ministry's Pamphlet No. 5 "Special Educational Treatment" 1946[99] quotes the number of educationally subnormal as 10% of the school population.

This figure agrees with the result of Sir Cyril Burt's survey carried out in London just before the first World War, when he calculated that rather over 10% of the total school population were definitely backward. "The Report of an Investigation of Backward Children in Birmingham,[96] 1920" - an investigation carried out by Sir Cyril Burt and Dr. B. Lloyd - states that "in all the senior departments of the Birmingham Schools as many as 8,000 children must be Technically backward". This again is about 10%.

Burt estimates, partly from surveys he and his students have carried out in villages in various country districts and partly from the results of group tests, applied by independent teachers and communicated to him privately, that the percentage of backward children in rural areas may well be as large as 20%.

The percentage of backward children throughout the whole country is sufficiently large to cause serious concern to educationists and social workers. It should be our duty to discover the choice of

subjects and the methods of teaching which will most convincingly educate these children whose intellectual capacity is limited, but whose ability to become potentially valuable citizens in their own sphere is perhaps as great as that of their fellows.

Music has often been suggested as a suitable study for retarded children and various claims have been made by practising teachers and psychologists about the musical aptitude of retarded children.

Charles Segal, the teacher of a backward class in a London Primary Boys' School, says of his boys: "The sense of music and rhythm are highly developed in these children, as is evidenced by their readiness to break into song and to dance".[67]

In her "Guide to Parents"[39] Hetta Loewy begins the Chapter on "Music and Rhythm" by stating ".....It is an accepted fact that all backward children are "musical" and music plays a large part in their education. By "Music" I mean the use of singing and games set to music. Musical training, either in appreciation or in the use of an instrument is much rarer. The child's incoherence and lack of co-ordination make precise education in music exceptionally difficult.....although so far the education of backward children has made most progress in the practical manual activities, I maintain that many such children would not only be improved by musical education, but would turn out in some cases to have genuine talent".

Burt,[9] in his treatise on backwardness writes: "The musical

abilities of backward children are the subject of frequent comment among school teachers, who often declare that dull or defective individuals are quite equal to the normal in musical appreciation, and suggest that more might be made of such talents in the classroom. My own experience is that as in handwork, so in music, the capacities of the dull and defective appear unusually high, only in comparison with their own low performances in more academic subjects; rarely are they as good as those of a normal child of the same age: I agree, however, that special talent in this direction is too often overlooked, and might be more systematically watched for and tested".

Discussing "special abilities" which appear to have no close connection with general intelligence and which may be found in high degree with almost any level of general intelligence, Professor Olive Wheeler[79] writes: "The chief of them are musical ability, representative drawing and mechanical ability". Owens and Grimm[56] have given a detailed note on a Low Grade Imbecile (Intelligence Quotient 23) in the Foribault, Minnesota, Colony for the Feebleminded, with exceptional musical ability.

Duncan sums up the conclusions of some thirty practising teachers I have consulted when he writes "....For the dullest of children music is a great joy"[20]: the same teachers were less convinced of the worthwhileness of teaching the fundamentals of the musical language to such children.

The special attention which the needs of the retarded child demands in the "basic subjects" is accepted and catered for in the

organisation of the school and its curriculum. Because of the varying attitudes towards the value of music as a study for retarded children as reflected in the extracts quoted above and the dearth of accurate observation, this is not always the case with music. Several classes are often grouped together on the assumption that all the children, whatever their ability, musical and otherwise, will benefit equally from the teaching given. This may be a time-table convenience and a staff economy - although only an exceptionally gifted teacher can be expected to handle such a situation with any degree of success: its educational value to the children is much more questionable.

Too often massed singing becomes a substitute for classwork and serious technical training. Community singing has a valid place in the life of any school, but it should be reserved for rare occasions. In no other lesson is it so easy for the day-dreamer to indulge in his fantasies and the lethargic child to allow himself to be carried along by his fellows.

Chapter V.

The Aim of the Investigation.

The investigation with which this thesis is concerned was stimulated by the request of a group of non-specialist music teachers for help in planning their lessons for classes of retarded children. The conflicting evidence given by psychologists and musicians on the musical ability of retarded children - to which reference has been made in Chapter IV - had left a sense of confusion in their minds, and the present investigation was undertaken in the hope that any results or conclusions which might emerge would be of practical value to them and to the investigator in his own class-teaching.

It was desired to investigate whether secondary modern school children who are retarded in the basic subjects have a correspondingly limited musical ability, whether they are able to participate in the musical activities and derive benefit from the music course devised for the more intelligent pupils of their own age, and if so, how great and of what a nature are their limitations. The extent to which music may influence the general educational development of retarded children was another question to which it was hoped the investigation might help to supply an answer.

Two Secondary Modern Schools - one for girls, the other for boys - were used for the investigation. They were situated in different areas of the same county and were of approximately the

same size. Their pupils came from varying social backgrounds which differed more within the districts concerned than between the districts.

There was no special reason for the choice of these particular schools, except that their Head Teachers were interested in both music and retarded children and were anxious to give to their own retarded pupils the greatest possible opportunities for participation in musical activities of all types. They were also prepared to co-operate with the investigator in supplying certain details of the children's background which it might otherwise have been difficult to obtain. At the beginning of the investigation all four groups had just entered their Modern Schools and so commenced the Course with the musical knowledge (of varying quality and quantity) which they had acquired in their contributory Primary Schools.

For the first year and a half of the investigation both classes received two music periods of 35 minutes each a week: for the remaining year only one period of the same length per week was possible.

An identical scheme of work was at first drawn up for all classes, although different material was used to stimulate the varying interests of the two sexes. The scheme was modified as occasion and need demanded during the period of the investigation which lasted from September 1950 to January 1953.

Chapter VI.

The Schools Chosen for the Investigation and the Areas they Serve.

The Secondary Modern School for Girls is housed in a comparatively new building which was opened in 1932 and commands a magnificent view of the city it serves. It has adequate accommodation for its three hundred and fifty girls and fifteen members of Staff, and a room with an upright piano is reserved for all the music lessons and as a centre of musical activities. The school's electric gramophone and radio and a better piano are kept in the Assembly Hall which can be used by the music teacher when more space than the classroom offers and the equipment mentioned above are required.

The Headmistress is keenly aware of the value of music in the life of the school and for the children's leisure time, and is anxious that it should make a vital impact upon the girls during their four years stay with her. Unfortunately, considerable difficulty has been experienced for a long period in securing a member of staff able to cope with the work as seriously as the size of the school and the interest of staff and pupils would warrant.

A number of the girls belong to the County's "League of Young Musicians", an organisation which encourages out-of-school and inter-school musical activities arranged by the members themselves, and small parties are taken from the school to any concerts of

worth in the immediate vicinity. These are unfortunately few, as the city has no concert hall or theatre. The only buildings large enough to house a sizable orchestra are the Cathedral and an Ice Rink, both of which have obvious limitations, even if there were a sufficiently large potential audience to make a full-scale orchestral concert a successful financial proposition.

In the small Town Hall a series of Chamber Music programmes is given each year, and here, too, schools and amateur music societies hold their annual festivals. Apart from the performances of local Church and Chapel Choirs and the City's Choral Society and String Orchestra, all other music-making is the responsibility of the University or Cathedral and does not impinge seriously upon the lives of the families from which the subjects of this experiment came. During the summer months visiting Brass Bands provide weekly programmes in the park. There is a considerable amount of music-making, both vocal and instrumental, in a neighbouring City, but as a concert there involves an hour's 'bus ride its influence is negligible upon all but the keenest musician.

There is a small Public Library and a Gramophone Club in the City. Two Community Centres and twenty-four Youth Groups attached to various organisations and churches provide a wide selection of activities.

Immediately before the war, slum-clearance transferred a

large number of families to a new housing estate on the outskirts of the city. Fifteen of the retarded girls concerned in this investigation lived on this estate, where there are already many serious social problems.

The Boys' Modern School, another fairly recent building (1930), is situated near the coast in a town of mushroom growth which has developed rapidly around collieries and an artificial harbour. Its proximity to the largest town in the County deprives it of the shopping and cultural amenities usually expected in a district with a population of its size.

There is one small theatre, normally used as a cinema, otherwise no Hall is available for the performance of music on a large scale. Several Church and Chapel Choirs sing oratorios, and a Ladies' Choir and a Male Voice Choir of high musical standard meet weekly for rehearsals. There is a "Light" Orchestra and a Colliery Brass Band, and other Bands visit the district during the summer. A Community Centre has a Gramophone Listening Group, and there are twenty-six Youth Groups in and around the town.

A Branch of the County Library is open to the public.

Unfortunately the opportunities for hearing music of a first-rate professional standard in the neighbouring County Borough are limited. A visiting Ballet Company very occasionally performs for a week in a theatre which for the rest of the year

is given over to variety programmes of the "Music-Hall" type. Apart from this and the work of local choral societies and school choirs and orchestras, the only musical high-lights are spasmodic "Celebrity" Concerts and the visits of Bands and Light Orchestras to Halls on the Sea Front.

The accommodation of the Boys' School is adequate for its numbers - three hundred and sixty boys and fifteen members of staff - and one room, with an upright piano, is used for all the music lessons, although it is not furnished specifically as a music room. The Assembly Hall with another upright piano is available for larger groups.

The Headmaster is an admirable musician who has had much experience and great success in training choirs. He is particularly interested in choral work amongst boys. His own interest is shared by several members of his staff, and the school has a long and worthy tradition of serious music making of a high standard. The musical influence of the Headmaster in the school is strengthened by the fact that the fathers of many of the children are members of his own local Male Voice Choir.

The school has a radio with loudspeakers fitted in each classroom, but only a portable gramophone.

In neither the Boys' or Girls' Modern Schools are the B.B.C. Schools' Music programmes regularly received, but both

of them incorporate the Friday morning "Service for Schools" into their scheme for morning Assemblies.

The number of contributory schools which sent pupils to the Girls' Modern School was six, to the Boys' Modern School, four. A few pupils were transferred from districts outside the catchment area.

Special and careful provision is made in both schools for the retarded children. They are given a responsible position in the Community and are valued for their distinctive contribution to it; but although they are generally treated as quite ordinary children, their special needs are recognised and individual guidance is given in the fullest measure possible within the limitations of time and staffing imposed upon the School.

The Girls' School has three 'special' classes known as Junior, Middle and Senior "Remove". The words "Retarded" and "Backward" are not used in connection with them, nor are the children labelled "C". The three "Removes" embrace the same overall age-grouping - eleven to fifteen years - as four other year groups with parallel "A" and "B" streams, so that promotion from one "Remove" to another is not annual or automatic. Transfer to another stream is possible whenever it is justified by marked improvement, and a child whose retardation is due to other factors than innate dullness may begin her school life in "Junior Remove" and end it in the form preparing for the General Certificate of Education.

No stigma appears to be felt by the children through membership of a "Remove" and they are a happy little community regarding themselves jealously as a self-contained family, but mixing freely during their playtimes and dinner hours and in sporting activities with their contemporaries in other groups. Special privileges are granted to help restore in them their sense of self respect and the feeling of "being wanted" which they often lack at home.

Since 1947 the Headmistress has been responsible for teaching "Remove" to play on a set of large tubular bells well-known national songs and some of the hymn-tunes of the Rev. J. Bacchus Dykes in whose parish the school is situated. This unique privilege is greatly appreciated by the children who spend much of their spare time practising. The delight and pride they experience in playing them at the garden parties and other functions organised by the "Remove" for their parents can be imagined. As the correct playing of the tunes depends essentially upon a mathematical sequence followed from printed tables, it is perhaps more a training in concentration and a mental discipline than a musical activity, although the pitch and rhythm training is still quite considerable.

The teachers of the retarded classes are specialists in their own subjects. They have received no extra training for this work, but their sympathetic awareness of the responsibilities

involved creates a healthy atmosphere in which the children can develop at their own pace and in their own manner with no sense of inferiority.

The first selection of the children into the categories "A", "B" and "Remove" depends partly upon the reports about them received from their Primary Schools and partly upon tests devised and qualitative judgments made by the Headmistress.

In the Boys' School each year-entry is divided into three streams: "A", "B" and "C". Three factors are considered in the assessment: (1) Reports from the Primary Schools, (2) Internal tests devised by the Headmaster, and (3) the Thanet Intelligence Tests.

As in the Girls' Department, no single teacher is responsible for the "C" stream, although at least one member of the Staff has made a special study of its needs. Transfers from other forms are frequent and the members of the "C" stream show no trace of a sense of inferiority and join freely with their more intelligent fellows in out-of-class activities.

In both schools an expression of questioning fear was noticed in the children selected to leave the apparent safety of their retarded fellows for the hazards and more competitive atmosphere of the "B" or "A" groups. Retarded children often live so near the mouth of a rumbling volcano at home that the feeling of security is one of the most treasured possessions

they can be given. Transfers, even when they are "promotions", need to be made judiciously: the intellectual benefits expected may easily be nullified by the emotional disturbance created.

In September 1950 there were 35 "normal" girls in the Group referred to hereinafter as "Group I", and 34 girls in the "Junior Remove" - "Group II"; 36 "normal" boys in the Group referred to hereinafter as "Group I", and 33 boys in the "C" stream - "Group II", making 71 children of both sexes in Group I and 67 in Group II, a total of 138 subjects altogether. This was a comparatively small number on which to base any valid judgment, but it was as large a group as the practical limitations of time for teaching and observation would allow, and it seemed wiser to make an exhaustive study of a small number of children than to deal nebulously with more subjects upon whose development one could have no personal influence and with whom immediate contact would be impossible.

Encouragement for this view was provided by the remarks of Sir Cyril Burt in his Introductory Note to Segal's account of his own backward class[67]: "The conclusions of a single investigator are necessarily limited. But in my view it is much more valuable to make an intensive study of a small group than to carry out a massive but superficial survey of large numbers". During the course of the investigation numbers fluctuated slightly. This is usual in any school over a two

year period, but it made the comparison of Groups more difficult. Several members of Group II were removed to Cottage Homes or Approved Schools for reasons detailed later, and some of Group I left, either because of removal from the district or for such other reasons as promotion to Grammar Schools after the Occasional Scholarship Examination.

Fortunately a solid core of children remained stable and the number of these in both Groups I and II was the same in each School - Group I: 32: Group II: 30. It is the results of these children which have been considered when an attempt has been made to differentiate between the interests and abilities of the two Groups.

The Intelligence Quotients of the children as assessed by the Cattell Group and Individual Tests of Intelligence, Scale II, varied enormously, the lowest I.Q. being 56 in the Girls' School. Several boys had I.Q.s of over 120. An I.Q. of 85 was regarded as the dividing line between normality and retardation.

As a result of this there were three girls in Group I whose I.Q.s would suggest that they should have been in Group II and two girls in Group II whose I.Q.s were over 85, the arbitrary figure quoted. In the Boys' School only one boy in Group II had an I.Q. higher than 85 and no boy of Group I had one lower. The scores of these six subjects

were carefully watched but in no case did they differ appreciably from those of the members of the Groups to which they had been assigned.

The investigator was constantly and uncomfortably aware of the inadequacy of the amount of time he was able to spend with Group II. In both schools he was treated as a member of staff, but there was a questioning attitude in some of the children as to his real position and purpose. Although he was unable to devote more time to actual teaching than that already quoted, he endeavoured to be about in the schools far more frequently, to make contact with the children and homes in the areas concerned and to attend activities both in and out of school in which the children were participating. This enabled him to see the children in a different light and to understand them, not as guinea pigs in an experiment, but as people of infinite worth, developing in their own peculiar way at their own speed. They in turn, it was hoped, would look upon the investigator as a friend as well as a teacher.

From both Head Teachers every consideration and attention were received.

Chapter VII.

The Musical Background of the Children.(i)

The contributory Primary Schools of any area inevitably produce a wide variety of teaching and considerably divergent standards in music - as in other subjects - unless interdepartmental and inter-school conferences of head and music teachers are held regularly to decide upon a common scheme of work which will achieve a degree of uniformity as well as allow scope for individual initiative.

Such general agreement resulted to a limited degree in both of the areas concerned in this investigation through the organisation of Non-Competitive Music Festivals. Over a period of years these had embraced the large majority of schools in the Educational Executive Divisions concerned. A carefully graded and contrasted syllabus of songs, selected by a Committee of teachers became the basis for the choral work of all the schools interested in the project. It was sufficiently small to allow for the introduction of other songs by individual teachers, but it also guaranteed that a nucleus of the repertoire in the schools was of a worthy standard.

A pleasing result of this intensive work in the Primary Schools was the large number of songs which the children involved in the investigation brought as a common heritage into their Secondary Schools.

In the Girls' School 175 songs and hymns were mentioned as having been learnt at previous schools, 147 by Group I and 51 by Group II, with some overlapping. Of the 53 of these which were listed by 3 or more girls 41% had been taught for performance at a Schools' Festival. "Begone Dull Care" was in the lists of 30 girls and was mentioned by more girls in Group II than any other song. The song which occurred most frequently in the lists of Group I was "Hunting the Hare". Both were Festival songs and were brisk and gay in character; both were traditional melodies in Compound Time. The titles of many songs in the lists of Group II were undecipherable: others like "Oh will make the keyhole" needed some elucidation!

In the Boys' School 195 songs and hymns were listed in all by both Groups, 156 by Group I and 59 by Group II, with overlapping. The song receiving most mentions - 31 by Group I-was "Old Abram Brown" by a contemporary composer, Benjamin Britten. It begins as a unison melody but then divides into two and four parts using the same melody and finally returning to the initial unison phrase sung over a different rhythmic pattern. As a Festival Song it had introduced the children to part-singing at the Primary Stage. Directed to be sung at a steady funereal tempo it has a droll sense of humour about it.

From Group II boys the item receiving most frequent mention - in nine lists - was the childlike carol, "Away in a Manger". This

was followed by "What shall we do with a drunken sailor?" and "The Frog and the Mouse", each on six lists and each in Compound Duple Time (6/8). "Away in a Manger" is in Simple Triple Time (3/4) but when sung in a rocking manner as is customary, it, too, groups its phrases into bars of Compound Duple Time.*

With this valuable heritage of song the children brought with them to the Modern Schools a generally receptive attitude towards music.

Indeed, the respect for music evinced in the Boys' School, even by those pupils who did not claim to regard the lesson as one of their "favourites" was most noticeable and gratifying throughout the experiment. Boy soloists and instrumentalists were accorded some of the hero worship usually reserved for members of the soccer team, and any suggestion that music was a fit occupation only for the "cissy" was non-existent. For many years the musical activities of this school have been designed for all boys from the time of their entry to that of their departure - when a local Male Voice Choir awaits them! - and the newcomer is inevitably absorbed into a rich tradition of music-making./

* It is interesting to notice that four out of the five songs mentioned most frequently in the lists of the children of both sexes leaving the Primary School are in this Time, which is also common to many Nursery Rhymes and Singing Games.

/ In many mining villages of the county music-making, in however amateur a manner, is still part of the warp and weft of the social life, and is accepted as a birthright by the children because of the association of their fathers and older brothers with male voice choirs and brass bands, which in turn are closely connected with the collieries.

Singing had occupied the greater part of the time allotted to music in the contributory Primary Schools. The use of percussion instruments was customary in some Infant Schools, but there had not always been a follow-up in the Junuior Departments. None of the Schools used the B.B.C. Music Programmes for Schools regularly, and few of the girls had been in contact with any form of "Music and Movement" since they left their Infant Departments. The teaching of the elements of music had apparently been spasmodic and no Group was able to read, at first sight, a short stepwise melody of six notes including an interval of a major third.

As an attempt to discover a starting point for teaching, the children of all four Groups were asked to write down in the normal staff notation six rhythm symbols, after these had been given their French rhythm names, and where possible, had been tapped as groups. The symbols chosen were those with which it was expected the children would be familiar:- (i) (ii) (iii)  (iv)  (v)  (vi)  .

The results tabulated below indicate the number of rhythm symbols correctly written down by the number of subjects opposite them. (The percentage of children in the Group giving correct symbols is added in brackets).

Table I.

Girls' School.

Correct Rhythm Symbols	Group I.		Group II.	
	No. of Subjects	%	No. of Subjects	%
6	3	(9.4)	-	-
5	2	(6.25)	-	-
4	8	(25.0)	2	(6.7)
3	9	(28.1)	7	(23.3)
2	6	(18.75)	5	(16.7)
1	3	(9.4)	8	(26.7)
0	1	(3.1)	8	(26.7)

The rhythm groups which both classes found difficult to express in notation were:-

Table II.

Boys' School.

Correct Rhythm Symbols	Group I.		Group II.	
	No. of Subjects	%	No. of Subjects	%
6	-	-	-	-
5	3	(9.4)	-	-
4	9	(28.1)	1	(3.3)
3	8	(25.0)	3	(10.0)
2	7	(21.9)	5	(16.7)
1	4	(12.5)	14	(46.7)
0	1	(3.1)	7	(23.3)

Again rhythm groups (v) and (vi) proved difficult for the majority of the subjects.

The results suggest that in both schools Group I had a firmer grasp of the essential symbols required in musical notation, and that the girls had a slight superiority over the boys in both Groups.

In order to discover how familiar was the use of tonic sol-fa, (and on the assumption that if the subjects were accustomed to it at all they would recognise the intervals of the common chord), the four intervals:- (i) d - m, (ii) s - d, (iii) d' - s, (iv) d' - d, were played to them on the piano. These they were asked to express through the sol-fa syllables after the tonic had first been sounded in each case. The results listed below indicate the number of correct intervals written down by the various numbers and percentages of children:-

Table III.

Girls' School.

Correct Intervals	Group I.		Group II.	
	No. of Subjects	%	No. of Subjects	%
4	2	6.3	-	-
3	3	9.4	2	6.7
2	4	12.5	1	3.3
1	12	37.5	8	26.7
0	11	34.4	19	63.3

Group II showed much less ability either to hear or to express the intervals than Group I. But it is impossible to state from this test whether the intervals were heard incorrectly, or whether, because of a lack of musical vocabulary, the subjects found it impossible to express in notation what they had heard.

Table IV.

Boys' School.

Correct Intervals	Group I.		Group II.	
	No. of Subjects	%	No. of Subjects	%
4	4	12.5	3	10.0
3	-	-	3	10.0
2	6	18.8	6	20.0
1	7	21.9	4	13.3
0	15	46.9	14	46.7

In these results there appears to be no appreciable difference between the Groups, but the boys seem to have had a better grounding in tonic sol-fa than the girls. In all Groups the interval number iii proved most difficult.

These results in no way indicated the comparative innate musical ability of Groups I & II; they were only valuable in helping the investigator to discover where the teaching of musical fundamentals must begin at this immediate post-primary stage and whether big differences in acquired knowledge could be expected between Groups I and II at the very beginning of the Course. The children's failure may have been due to many causes - faulty hearing, a lack of ability or facility to express what had been heard, forgetfulness because of the summer holidays, and absence of teaching or bad teaching of the notation symbols with concomitant inadequacy of aural training in the Primary Schools.

It was recognised that technical knowledge of any subject is not necessarily a guarantee of genuine interest in the subject, and an attempt was next made to discover as accurately as the children's own admission permitted their interest in music in its various aspects.

At the beginning of the investigation a questionnaire was given to all four Groups which contained the following direction as Item No. 2*:-

"Place a cross after the sentence in the group below which you consider to be most true about yourself:-

(a) I am very interested in music.....

(b) I am interested in music.....

(c) I am not interested in music.....

(d) I do not like music.....".

This was based on Item No. 1 of Wing's Standardised Tests of Musical Intelligence[83] which read:-

"Place a tick against the word that most nearly describes your general attitude towards music:-

A. Very interested..... B. Interested.....

C. Indifferent..... D. Dislike..... ".

Some word substitutions (e.g. Not interested instead of Indifferent) were made to help the retarded children to understand

* Item No. 1 simply required the name, age, home address and school of the subject.

more clearly what they were expected to do. The directions were given in writing to the children, but they were also read aloud, as some members of Group II were unable to read adequately. It was explained that music in this context meant not only the music they learnt in school or from their private teachers, but also the music they were accustomed to hear on the radio, in the cinema, and elsewhere. The investigator's concern was not so much with the children who were prepared to accept passively what an adult wanted them to like, but with those who had a genuine enthusiasm for music itself, in whatever manifestation they met it.

The number and percentage of the subjects in the various categories are listed below:-

Table V.

Degree of Musical Interest in Girls' School.

Interest Group.	Very Interested		Interested		Not Interested		Do not like	
	No.	%	No.	%	No.	%	No.	%
Group I	7	21.9	25	78.1	0	0	0	0
Group II	9	30.0	21	70.0	0	0	0	0

Table VI.

Degree of Musical Interest in Boys' School.

Interest Group	Very Interested		Interested		Not Interested		Do not like	
	No.	%	No.	%	No.	%	No.	%
Group I	14	43.8	16	50.0	1	3.1	1	3.1
Group II	6	20.0	19	63.3	5	16.7	0	0

The Chi-Square Test was used as a test of significance.

In the Girls' School the result was significant only at the 0.50 level: in the Boys' School it was slightly more significant - at the 0.05 level.

The results suggest that the keenest interest was evinced at this stage by the most intelligent boys and that there was a greater variety of interest - and perhaps more forthright answering - in the Boys' Groups. But the results from neither of the schools suggest that the retarded children had any less real interest in music than had their more intelligent fellows. There may have been a tendency in the Girls' Groups to attempt to "please teacher", but observations during the terms immediately after the questionnaire had been submitted, substantially confirmed the statements made by the children, and there was certainly no suspicion

that strong opinions or preferences were withheld later.*

The number of children playing instruments of any kind was not large:-

Girls' School: Group I - 8 (25%) : Group II - 4 (12.5%)

Boys' School: Group I - 9 (30%) : Group II - 8 (26.7%).

All the instrumentalists in the girls' Groups were pianists. In addition, one girl was having regular singing lessons and another said she played the tambourine. (She attended the meetings of the Salvation Army, an organisation which had many loyal adherents amongst the girls of Group II). The instruments listed by the boys were of a much more heterogeneous character: piano, organ,

* It is interesting to compare Tables V and VI with Tables VII and VIII. Table VII is the result of an investigation made amongst 158 Grammar School Children of both sexes of the same age but superior intelligence at the same time and in the same area. Table VIII comes from Dr. Wing's Monograph, "Tests of Musical Ability and Appreciation"[83], and shows the degree of musical interest in school boys.

Table. VII.

Degree of Musical Interest in Grammar School Pupils.

Interest Group	Very Interested	Interested	Not Interested	Do not like
Number	27	83	43	5
Percentage	17.1	52.5	27.2	3.2

Table VIII.

Degreee of Musical Interest in School Boys.

Interest Group	Very Interested	Interested	Not Interested	Do not like
Number	64	162	88	19
Percentage	19	48.5	26.5	6

cornet, violin, banjo, guitar and mouth-organ. The pianists were in the majority, the organists (presumably "harmoniumists") and cornettists tied for second place, and the remainder of the instruments each claimed one player. 68% of all the children in both schools who played an instrument had, or were still having, lessons on it. This, in fact, amounted to almost all those who played a serious instrument like the piano, organ and violin.

It may be argued that some of the instruments are hardly worth detailing, but it seemed wise at this stage to collect as much data as possible about the musical background of the children.*

Of the children who played instruments of any sort 24 (82.8%) - (15 (51.75%) from Group I and 9 (31.05%) from Group II) - came from homes in which an older member of the family - although not

* In the Grammar School Group mentioned in Table VII and questioned at the same time 90 of the children were performers, 58 of these being pianists and 25 violinists. The remaining 7 were divided amongst the following instruments: trombone, piano-accordion, organ, cornet, harmonica and recorder. This is a high proportion of performers, but the Grammar School had a specialist teacher in charge of its music and a visiting teacher for its string classes. The same visiting violin teacher has now commenced classes at one of the two Modern Schools involved in this investigation, and the children who have just entered the school are benefiting from the opportunity afforded them.

necessarily one of the parents - also played an instrument. It would appear that the children of Group I had a slightly better chance of hearing music in their homes than those of Group II, but the quality of the music heard and the standard of its performance are obviously relevant. Of neither of these was there any indication.

The frequency with which the instrument was played is indicated in the following table which combines the information from both schools:-

Table IX.

Frequency with which instrument is played	Not very often	Quite often	Very often
Group I	5 (33.3%)	3 (20.0%)	7 (46.7%)
Group II	4 (44.4%)	3 (33.3%)	2 (22.2%)

Group II were again denied equal opportunitiew with Group I, since their family instrumentalists, as well as being fewer in numbers, played less frequently. It can be expected that the homes in which music is regularly performed will be the most helpful environment for any child with latent musical ability, since children are influenced by their surroundings and tend to imitate what they see and hear.

It is generally assumed that musical ability is inherited from

musical parents. In Group I the parents of 13 of the children played a reputable instrument fairly frequently, in Group II, 10. In all cases only one of the parents played. Of the children in Group I who played musical instruments only 4 came from performing parents, of those in Group II, 4.

Although it is undoubtedly true that many of the best musicians come from musical parents - the Bach family being the classic example - this does not entirely validate the assumption. As Wing points out ".....there may be highly musical parents whose children are not musical and are therefore forgotten".[63]

A person need not be a capable performer to stake a claim as a musician, but performing ability is generally a guarantee of musicianship, and one would expect children of instrumentalists or vocalists to be likely to possess innate ability, and to find in their homes the greatest opportunities and an atmosphere conducive to musical development.

In most homes the use of the radio has displaced the family music-making which was enjoyed before the arrival of more synthetic entertainments. The situation described in Chapter I has been reversed and the serious music-making of the country has been transferred from the home to the school.

62 of the children listened frequently to the radio. With both Groups and in both schools the Light Programme was the most popular, followed closely by Radio Luxembourg. The Home Service

and American Forces Network had a regular clientele and a surprisingly large number of children said that they listened to the "Third".* This seems to be explained by the fact that parents "switched from programme to programme throughout the evening", and so occasionally the Third was heard by sheer chance. A few children in both Groups I and II asserted that they listened to this programme with their parents for special purposes.

What the children listened to on these programmes is equally interesting and revealing - if also somewhat disturbing. In the Girls' School Gracie Fields headed the bill of popularity in Group I with inclusion in 21 of the subjects' lists. She was followed by Bing Crosby (presumably heard on records) with 16 mentions, Joseph Locke (an Irish tenor "discovery") with 12 and Vera Lynn with 10. The first music of a serious nature mentioned by a number of girls (7) was provided by "School Choirs" - and the first serious musicians of note were Eileen Joyce and Sir Malcolm Sargent who were mentioned by 5 of the girls and who shared their position with Petula Clarke and the Andrew Sisters. The B.B.C. Symphony Orchestra was the only Orchestra which had been heard by more than 9 of the subjects in Group I.

The listening of Group II was even more limited. Again Gracie Fields was one of the most widely heard artistes with mention in the lists of 8 of the girls. This time she was

* It was encouraging to find that no Group of children treated the mention of the Third Programme as a cause for jokes as do so many comedians and indeed, members of staffrooms.

equalled by Bing Crosby, George Formby and Vera Lynn. Joseph Locke followed with 5 of the girls as listeners. The only serious artist included was William Herbert and the only Orchestra, the "Light Orchestra" - each by one girl.

The five people listened to by most boys in Group I were all men, two of them dance band leaders. Donald Peers was included in the lists of 25 of them, Billy Cotton and Bing Crosby tied for second place with 24 "mentions", and they were followed by Joe Loss and Ronny Ronalde with 20. Violet Carson was the female artist with most boy listeners, 20 having heard her at some time or other. Of artists performing serious music, Rawitz and Landauer, the pianists, topped the bill with 6 listeners.

The band-leader, Billy Cotton, had the largest number of listeners (17) in Group II. He was followed by Joseph Locke (16), Donald Peers and Al Jolson (10 each), and Reginald Dixon, the organist, 9. The Black Dyke Band with 5 "mentions" was the only non-variety artist or group included in more than 10% of the lists.

The information received from the two Groups in both of the schools reveals a fragile background of serious listening and one hardly likely to stimulate the children to musical activity of a worth-while nature.

Little appreciable difference can be noted between the two Groups for, although in both Schools Group I listened to more music,

its quality was of such a questionable character and of so uniform a pattern that the extra quantity conferred no extra benefit, and may indeed have tended to harden its recipients against new impressions.*

A further enquiry was made as to the number of children who were influenced by music outside the home and school through membership of a choir, whether attached to a Church, Chapel, Sunday School or Youth Club. Only those children who were still members of the choir at the time of the Questionnaire were included in the summing up.

In the Girls' School 17 girls from Group I and 15 from Group II were in choirs; in the Boys' School the choristers were 7 boys of Group I and 5 of Group II. Again the boys with the highest grade of general intelligence were most active in this branch of music-making, and as a result their already slightly superior background was enlarged and enriched.

The biggest problem facing the music teacher in the Secondary Modern School is not so much how to stimulate an interest in music

* A comparison with the listening of the Grammar School Group is interesting. Ten "artistes" (including choirs and orchestras) were listed with the number of children of both sexes who listened to them:-

Petula Clarke.....47	Joseph Locke.....33
Billy Cotton.....44	London Philharmonic Orchestra.....33
Palm Court Hotel Orchestra.....35	Ann Ziegler.....26
Luton Girls' Choir..33	Gigli.....25
Webster Booth.....33	Bing Crosby.....25

in the children as how to influence them sufficiently strongly to combat the shoddy quality of the music they hear in their home environments and districts, and how to compensate for the lack of encouragement to any musical activity.

In certain cases the home attitude is not only unhelpful but militantly antagonistic to the ideas and aims of the Head Teachers and members of the schools' staffs.

One girl from Group II brought to school from her home the music manuscript book which had been given to her a day earlier. Her attempts at musical notation, over which she had spent some time and taken obvious pride, were scribbled on and the whole page defaced by a male visitor to her sister who had "no use for such goings on", and had "not been taught like that when he was at school". This act was regarded as a joke by the family.

Another mother supported her child defiantly against the Head Teacher, and threatened to take the matter to "higher authority" because her daughter (who had been asked to brush her tunic) was "shown up" in class.

These incidents may not appear immediately relevant to the subject under discussion, but they reveal an attitude which embraces all the school's life and activities and which inevitably extends to music.

Parental sneers at a child's "snobbish" tastes do much to destroy a budding enthusiasm and may well encourage a child to

build up a hardened frontage over a sensitive spirit. The unmasking of several children who were inhibited from developing in their own way as individual personalities with interests and delights of their own was one of the major joys experienced during this investigation.

In almost every case the children entered school with a real interest in music and a desire to do well at it. This was suggested by the answers given to the initial Questionnaire and was verified by observations made during the remainder of the Course. But even if two music periods of 45 minutes each per week are included in the timetable and another 10 minutes per day of incidental music-making or listening (e.g. in Morning Assembly) is allowed for, the school is responsible for the child's music for only 2 hours 20 minutes per week - and even that would be considered an over-generous allowance by many schools.

In the children's homes the radio churns out music of questionable standard for a similar amount of time - and more - each night. If to this is added the time spent by the children in the cinema - where a certain amount of music is heard - one becomes uncomfortably aware of the struggle needed to maintain any standards at all. It is chastening to remember that seven-eighths of a child's total time when he is of school age is spent in his home environment.

Unfortunately few of the parents from the homes chiefly concerned in this investigation ever attended a Parent-Teacher Association Meeting to discover what the school was trying to do for their children and how best they could co-operate to further its aims. Their attitude to

the Head Teachers and the school buildings remained very much what it must have been when they were at school themselves.

Chapter VIII.

The Social Background of the Children.

Burt has shown how the proportion of retarded children varies with social conditions....."Where Charles Booth blackened his streets to show the haunts of the criminal, or tinted them blue to mark the hovels of the poor, there our map also displays the darker shade and reveals the largest number of backward boys and girls. Such a plan of the country shows at once where special provision is most urgently needed and suggests a possible cause".[11]

All the investigators agree in finding a larger proportion of retarded children in districts where poverty is always knocking at the door and overcrowding is rife, than in the more prosperous areas.

In the London Boroughs Burt[10] estimated the correlation of backwardness with overcrowding as 0.89, with poverty as 0.727, with infantile mortality as 0.93, and with juvenile delinquency as 0.687.

The members of Group II in my own investigation came from appreciably poorer homes, both financially and culturally, than those of Group I. The fathers of the majority of the children in both Groups and schools were miners or officials of the National Coal Board, the remainder were drawn from the ranks of the professional classes, tradesmen and farm labourers. Nearly all the parents of Group II's children were manual workers.

The homes of Group II were more overcrowded than those of Group I, families of five and six - with additional "visitors" - often sharing four rooms. As the male adults in many of these homes came in from various "shifts" at all hours of the day and night, the table was permanently laid and the radio left on as an essential background (and stimulus) to the conversation. Such living conditions are hardly likely to encourage a child to spend the evening in serious pursuits or to invite friends to the house.

23 children of Group I and 15 children of Group II in the Girls' School, and 16 children of Group I and 14 children of Group II in the Boys' School stayed at school for their midday meal. These meals were carefully planned and prepared, and were often the only balanced diet many of the children had during the week. The breakfasts of Group II generally consisted of a hasty cup of tea and a slice of bread and jam or a liberal helping of "fry-up". The favourite evening meal was "fish and chips" and this, followed by a cream cake and more tea, also formed the basic meal for the children who went home at midday.

It is little wonder that so many of the children of Group II suffered from malnutrition, recurrent catarrh and anaemia. 15 of them had to attend the school clinic regularly in comparison with 4 of Group I. Other reasons for visits to the clinic were eye and ear infections. Enlarged tonsils and adenoids were common causes for absences and one child of each sex in Group II had a serious speech defect.

Although the clothes of the boys of Group II were rough, torn and untidy, with a dearth of buttons and other essentials, they could hardly be called inadequate. Only one case needed immediate attention - that of a boy whose upper garments in mid-winter were a thin vest and a polo-neck pullover. Without exception the boys of Group I were all well-clothed, and their constant untidiness and shabby appearance were due to the way in which their clothes were abused during the rough and tumble of their games, not to any parental negligence.

The girls of Group II were prone to wear over-decorative clothing and many ornaments, despite the fact that a regulation detailing the type of clothes which were considered suitable for school use existed. All the latest fashions appeared from time to time, together with exaggerated hair styles and nail varnish. Other girls in this Group wore drab garments, but on the whole they were warmly clad. Group I girls were much more willing to follow the spirit, if not the letter, of the school regulation.

Clothing was expensive and the parents of many of the children were not practised in the art of using their money to the best purpose. Never having received it so regularly and in such large quantities before they tended to spend it hastily on unessentials.*

* There was no serious unemployment in either of the areas concerned. The lack of thoughtful financial management is shown by the fact that when the price of school meals was recently raised by 2d. per day, a number of parents refused to allow their children to stay for them. The same children spent 2½d per day to travel home for a meal.

In damp and snowy weather children were absent because of shoddy and worn footwear, but the nicotine stains on the fingers of boys and girls in Group II at the age of twelve showed that smoking had become an established habit, not only accepted, but often actively encouraged by the parents. Some boys used old "tab" ends, other boys and all the girls who smoked received a weekly ration of cigarettes for "putting in coals", "running messages", or staying in to look after the baby. 6 girls and 18 boys in Group II smoked regularly. No girl and only 6 boys in Group I indulged regularly, although almost all the boys dabbled in the normal schoolboy fashion.

Even more detrimental to the healthy development of the children in Group II than poverty, bad feeding and over-crowding, was the amount of tension between parents which they experienced in the home. 24 of the subjects lived in a strained atmosphere.

The following case-studies will illustrate the background against which the school life of some of the retarded children concerned in this investigation must be considered.

The parents of "A" had been separated. "A" remained with the father, a miner, a sister went with the mother. The parents were living together again, but the mother was not sure to whom she owed her loyalty - her husband or the person with whom she had been staying in the meanwhile. The father did all possible with threats and force to keep her with him, but she was only

waiting for the day when "A" could leave school and start work before she became openly defiant and left him. The young mother constantly promised to send "A" to school and the father was terrified of a "summons"; but the commands of neither of them had the slightest effect on "A" who was influenced only by the straight talking of an inspector from the National Society for the Prevention of Cruelty to Children. After his visit "A" attended school spasmodically.

"B"s sister was killed in an accident when a lorry driver lost control of his vehicle and ploughed into a queue of children waiting at the 'bus stop outside their Primary School. This tragedy probably hastened the death of the mother a year later. She was a kindly woman who had tried to keep her husband "straight". He now abandoned himself to drink, and at the age of nine "B" became responsible for looking after both him and the house, as well as acting as mother to a younger sister. As a result she was continually absent from the Primary School and her father received a summons. A brother was serving a prison sentence for theft, and a sister, married between the birth of her second and third child, brought the whole family back to live in the father's house - but took no responsibility for any work. "B" entered the Modern School stunted in growth, shrinking and timid and unable to write her name. With her younger sister she was recently removed to Cottage Homes as a protection against her father who has since been bound over for two years on charges of incest and assault.

The mother of "C" had left her husband, an entirely praiseworthy man, and was spending the greater part of her time with a sailor. After a while a divorce was obtained by the father. The sailor now married the mother and "C" was able to return again to his mother after a period of insecurity when he stayed with various relatives and friends. Gifts were showered on him in an overlavish manner by the step-father (his expensive gold watch became the envy of all his schoolfellows), but he was otherwise neglected and allowed to do as he pleased.

"D" came from a home in which the mother had recently died. The family were cared for by an elder sister. The father expressed his intention of re-marrying at the earliest opportunity and large numbers of "visitors" for both the father and the elder sister came to the house. "D" was never sure where she would be spending the night and was often sent away at a moment's notice to stay with a married sister. On at least one occasion she was kept from school in order to "pack up" and move to a relative's house so that her father could get married in a neighbouring county. Neither the marriage nor the move had come when the present investigation ended, but for two years "D" had lived in a state of constant uncertainty and fear. Her father (a Council dustman) was well-meaning towards her, and no ill-treatment of a physical nature could ever be ascertained.

"E" was bribed with cigarettes each night to look after the

house while her mother spent her time on the streets. Her sister, who was in a remand home for stealing her mother's sweet coupons, had been witnessed against incourt by her mother. "E" was being trained in her mother's profession.

One begins to wonder how children who live so continually on the edge of a precipice are able to maintain any equanimity, confidence or strength of purpose at all.

Numbers of them appear before the courts for quite serious offences*, others are beguiled because of their dullness.

"F" was not wanted and always looked uncared for and dirty. Her physical development was rapid and at the age of twelve her appearance was that of a young woman. Suspicion had been cast on her activities for some time and for a day and a night she was missing. When she was discovered she was convicted for her behaviour with a much older man. She is now in a Remand Home.

"G" lost her mother early and was living with her grandmother who did everything to give her a normal happy existence. She was well-fed and always spotlessly clean. With two friends she went collecting for a national charitable organisation. At lunch time the two friends decided to spend some of the money on

[62]

* Robertson estimates that four-fifths of the delinquents and criminals come from the ranks of the backward, and in his study of juvenile delinquency Burt[10] found that nearly 30% of the delinquents were definitely dull and nearly 60% were backward in educational attainments.

the inevitable fish and chips. "G" opposed the idea, but accepted a few chips. She appeared in court for "aiding and abetting". Her case was dismissed, but the nervous strain upon the child, who failed to understand what wrong she had done, and the effect upon the grandmother, who explained to the Headmistress that she daren't lift up her head again, can be well imagined.

It is tragically easy for the retarded child to be duped by the more clever companion or adult and so to become still further a victim of circumstances.

But it would be unjust to suggest that all the homes of Group II harboured such problems as those described above.

"H" was the son of a farm labourer who worked and lived hard. There was a large family but the mother did all possible to keep them clean and neat, to satisfy their appetites, and to clothe them adequately. It was a daily struggle, but she succeeded, and at the same time managed to create a happy, purposeful atmosphere in the home.

It would also be untrue to suggest that none of the social difficulties which made life complicated for the retarded children were not present in some of the homes of Group I, but it is the conviction of the investigator that they were far fewer in number and less in influence, the atmosphere in the majority of the homes following the pattern of "I" whose father was a policeman and whose mother held a responsible position as a Civil Defence worker. Both were interested in the school and attended the

Parent Teacher Association meetings regularly. There was order in the home and a sense of purpose about its activities.

When all the circumstances and influences impinging upon the lives of the subjects in Group II are taken into account it is understandable that there should have been an alarming amount of absence. This was not so noticeable in Group II of the Boys' School, but the number and extent of absences in the Girls' School caused continual delays in both teaching and testing during the investigation.

Tuesday, the day on which one of the music lessons was planned, proved to be the best day for attendance - because the long week-end was over. Tuesday, Wednesday,- and possibly Thursday,- were regarded as work days, and the week-end holiday began again on a Friday morning. Term commenced a week later and ended a week earlier than for the girls of Group I. This attitude was very prevalent, and on the slightest pretext (e.g. pantomime matinees in the winter, trips in the summer, "errands", late-rising), the children were kept from school by their parents.

The amount of absence of the members of Group II was one of the most potent reasons for their retardation. Another was their listlessness because of the late hour at which they went to bed. These bed-times are indicated in Table XII below:-

Table XII.

Girls' School.

Bed Times (p.m)	8.0 - 8.30	8.30 - 9.0	9.0 - 9.30	9.30 - 10.0	10.0 - 10.30	10.30 - 11.0	11.0 -	Any time
Numbers of subjects in Group I	1	5	6	8	8	4	-	-
Numbers of subjects in Group II	1	3	3	3	12	3	2	3

Boys' School.

Bed Times (p.m.)	8.0 - 8.30	8.30 - 9.0	9.0 - 9.30	9.30 - 10.0	10.0 - 10.30	10.30 - 11.0	11.0 - 11.30	11.30 - 12.0	12.0 -
Numbers of subjects in Group I	4	2	7	11	6	1	1	-	-
Numbers of subjects in Group II	1	1	2	4	8	5	4	1	4

In each case the section starts on the hour or half-hour and ends immediately before the half-hour or hour.

This indicates that both girls and boys of Group II tended to go to bed later than the members of Group I. Several reasons were given by the children themselves for such lateness. Some of them remained in charge of the house while both parents were out, some of them stayed up to listen to B.B.C. programmes, and a large number went regularly to second house "pictures" and to dances. Since some of them also had to rise early in the morning - one of them at 6.0 o'clock - to get relatives off to work, the amount of lethargy and drowsiness displayed by the members of Group II, particularly in the Girls' School, was

understandable and was not a fault for which they themselves were responsible. The hurried breakfast and unpunctuality of many of them was caused by the tardy rising of the mother after the late arrival home of father from his shift at the pit.

The "pictures" were the favourite form of leisure occupation. No discrimination was shown in the choice of films.

The number of times the children normally attended the cinema per week is summarised below; those who went seven times (an admission which was verified) being present every week-night and on Sundays as well - three cinemas in the immediate vicinity making possible a different film for every visit.

Table XIII.*

Girls' School.

No. of visits to cinema per week.	7	6	5	4	3	2	1	0
Group I	1	3	0	2	3	10	8	1
Group II	2	1	2	7	3	2	1	1

Boys' School.

No. of visits to cinema per week.	7	6	5	4	3	2	1	0
Group I	-	-	1	3	6	9	10	3
Group II	1	1	3	5	4	5	5	1

* The figures quoted in Table XIII are the actual number of children who went to the cinema regularly - not the percentage. Some children who only went spasmodically could not quote a weekly attendance figure.

The overcrowding in the homes of the children of Group II may help to explain why this Group spent more time in the cinema than Group I. The boys also tended to go fairly regularly to a Theatre in the neighbouring town which provided musical reviews and variety shows.

The leisure reading of all groups showed the same superficiality as their musical background. The lists below rank in order of "number of mentions" in the children's own lists the regular weekly reading of the two Groups in both schools.

Girls' School.

Group I.

Name of Magazine or Book	% of Children	Number of Children
School Friend	56.3	18
Dandy)		
Beano)	45.6	15
Girl	25.0	8
Books from the School Library	21.9	7
School Girl Stories and Books	18.8	6
Silver Star	15.5	5
Books from the Public Library)	12.5	4
Knock Out)		
Cowboy Comics)		
Superman)	9.4	3
Captain Marvel)		
Blighty)		
Film Fun)		
Bat Man)		
Lash Larne)	6.25	2
Jungle Girls)		
Marvel Family)		
Adventure)		

A limited number of other magazines were mentioned by individuals in this Group, some of them, e.g. "The Children's Newspaper", designed especially for children, others, e.g. "Glamour", borrowed from their mothers.

Girls' School.

Group II.

Name of Magazine or Book	% of Children	Number of Children
Beano	76.6	23
Dandy	68.70	21
School Friend	53.3	16
Girl	43.3	13
Film Fun)		
Knock Out)	20.0	6
Radio Fun	16.6	5
Roy Rogers)		
Eagle)		
Superman)	13.3	4
Robin Hood)		
Lion)		
Books from the School Library	6.6	2

There were few other individual items mentioned by this Group of girls and three girls said that they never read at all except in school.

Boys' School.

Group I.

Name of Magazine or Book	% of Children	Number of Children
Beano)	37.5	12
Books from the School Library)		
Dandy	34.3	11
Adventure	25.0	8
Wizard)		
Reveille)	18.7	6
Books from the County Library)		
Hotspur)		
Rover)	12.5	4
Superman)		
Captain Marvel)		
Eagle)	9.9	3
Western)		
Film Fun)	6.3	2

A large variety of single items, both magazines, e.g. the "Motor-Cycle" and boys' books, e.g. "The Book of Football", were

mentioned by individual subjects of this Group.

Boys' School.

Group II.

Name of Magazine or Book	% of Children	Number of Children
Dandy	53.3	16
Beano	43.3	13
Tit-Bits	23.3	7
Adventure) Reveille) Boxing) Comic Books) Lion) Captain Marvel) Roy Rogers)	16.6	5
	10.0	3
School Friend) Film Fun) Buffalo Bill) Books from the School Library)	6.7	2

Other single items, amongst them, the Bible, were mentioned by the boys of Group II, but their reading was much less comprehensive than that of Group I in either school.

Several comics suitable for much younger children were included in the lists of Group II of the Girls' School:- "Tiny Tots", "Chips", "Mickey Mouse", "Tip Top", and in those of Group I of the Boys' School:- "Tiny Tots", "Chips", "Comic Cuts" and "Rainbow".

Jenkinson[37] noticed the tendency towards the persistence of Juvenile Magazines in the reading of Secondary and Senior School Children in his investigation into the out-of-school reading interests of 3,000 boys and girls aged 12 to 16, and all the comics mentioned in the preceding paragraphs are included in his lists. He comments that "the persistence of juvenile reading

tastes does not mean a fixation at a juvenile reading level" and quotes the fact that"the highest scorer of "juveniles" had a record in other questions about reading well up to or above the average in quality."

The girls of Group II who quoted the juvenile comics all had poor reading ability and were able to get more satisfaction from the "picture-strip" type of comics than from those containing much reading matter.

No girls mentioned daily newspapers. They were listed by a few boys who quoted sports editions, the names of local papers noted for their sports' contributions, and several Sunday papers. Nor were any music magazines included. Only two being published at present are at all suitable for the type of child concerned in this experiment, but they had not been heard of by any child in either Group or School.

Much of the responsibility for this fragile reading background, as Jenkinson suggests, must be laid at the door of the children's homes - ".....a feeble or degraded cultural life, involving inability to read anything other than inferior literature is a product of harsh and degrading conditions of life. Quality of reading is a function of quality of living. A poverty-stricken home normally means poor reading habits. It is true that many people carve out for themselves an estimable culture when their living conditions are adverse, and that many others fail to take advantage of leisure, comfort and abundant opportunities. But,

generally speaking, a fairly high level of well-being is a necessary condition for the attainment and preservation of good reading standards".[37.]

Not only were the homes of a large number of the children not conducive to their healthy all-round development, but in some of the areas in which they lived the neighbourhood itself discouraged the self-respect and disciplined personal training which are the features of a good home. In an area where a large proportion of the subjects lived the school uniform was treated with a sneer as a mark of "social snobbery", and children leaving school in a neat, clean state were hardly recognisable in either appearance or behaviour an hour later in their home environment.

Sixteen of the girls and thirteen of the boys in Group I were attached to a Sunday School. Considerably fewer attended other Church or Chapel Services. Only three of the boys sang regularly in Church Choirs. The number of children in Group II who had any serious connections with church activities of any sort was considerably lower, ten of the girls and seven of the boys attending Sunday School with any regularity. No boys were members of Church Choirs. As there were Roman Catholic Secondary Schools in both areas, no Roman Catholic children were concerned in the investigation. The two Chur[illegible] with most adherents were the Anglican and the Methodist,

Salvation Army meetings were popular with a large number of members of Group II in both Schools.

None of the girls in Group II were in a Youth Club or other organisation. Seven of Group I were members of the Girl Guides or Girls' Friendly Society.

The only Youth Organisation to which boys from Group II were regularly attached was the Army Cadet Force. This involved six boys in each group. There were a few scouts in Group I.

Chapter IX.

The Scheme of Work Used During the Experiment.

Although, as has been indicated, all the children brought with them into their Secondary Schools a rich and varied collection of songs and hymns, it was necessary to devote a large proportion of time during the first term to class singing in order to secure an easy use of the voice, unanimity of tone and vowel sounds and a precision of articulation. This period of concentrated class singing enabled the children to build up together a common repertoire of songs, absorbing some of their previous favourites and introducing new ones as a foundation for future work. It also gave time for any common nucleus of musical knowledge which might be shared by them, and for experimentation with musical material as a preparation for the construction of a battery of tests.

Throughout the experiment British and foreign folk songs formed the basis of the song repertoire. In the Boys' School, because of its association with the sea, shanties took pride of place. They were eminently suitable for adolescent boys, although restraint had to be demanded constantly owing to the proximity of other classes!

During each Christmas term carols were prepared by all Groups. The large number of well-known - and well-worn - carols and Christmas hymns learnt in the Primary Schools necessitated the introduction of new material. Bax's "Five Fantasies on Polish

Carols" proved popular with all Groups during the first term; after that many rare English traditional and European carols were sung, and the girls prepared C. Armstrong Gibbs' music from a nativity play, "The Three Kings".

To the folk and national songs were later added 'classical' songs by Handel, Purcell, Bach, Beethoven and Mozart, music by less familiar composers such as Storace and the County's own "Master of the King's Music", William Shield, and modern songs by contemporary composers. Some were chosen for specific teaching points, and through them breathing and vocal exercises, as well as the principles of elementary form, were introduced. The hymns learnt were closely linked up with Morning Assembly and the Religious Instruction periods.

Unfortunately, music copies of the hymn books were not available in either school, but the melody edition of the songs, and often both melody and accompaniment of the modern compositions, were used by the children from the beginning of the experiment - even when the songs were being taught by rote to assure speed of learning. In this way the children, if not able to read the melodic intervals accurately, could at least trace the shape of the melodies as contours, and in so doing (in association with the sound heard by them) were developing a clearer conception of both pitch and rhythm notation.

Systematic training in music reading was commenced in the second term of the course, the choice of songs and hymns being made so that the new elements of pitch and rhythm were gradually

and progressively introduced into the scheme of instruction. It was considered better to link up the music reading with the actual music which the children were experiencing in their various activities than to use concocted exercises which bore little resemblance to real music. Where necessary, separate intervals and rhythmic groupings were isolated for special teaching purposes.*

Tonic sol-fa was used as the approach to staff notation. As soon as possible both notations were employed in parallel and finally the tonic sol-fa was omitted altogether, except where it was found to be a valuable aid in learning, or fixing, a difficult interval. The French rhythm names were treated as pure sound and were never written on the black-board.

The final aim of the training in music reading was not an ambitious one. It was hoped that at the end of the Course the subjects would be able to read simple melodies which were a mixture of steps and small leaps and which used the following rhythm elements:-  and the two rests  and  . Such a limited aim would at least equip more children to take their places in Youth Club

* In learning his native language the child acquires the skills of reading and writing through the processes of performing them. Exactly the same principle is applicable to music and the symbols learnt in this way through musical experience are far more meaningful to the child.

Choirs and Adult Choral Societies than is usually the case.* In addition to the normal song repertoire, easy fragments from the great instrumental and vocal classics (e.g. the stepwise melody from the "Ode to Joy" in the last movement of Beethoven's Ninth Symphony) were used for reading purposes. This in turn led on to more specialised listening.

In the Boys' School the reading of music was aided, and the learning of an instrument fostered, by the introduction of model keyboards and the integration of the 'Piano Class' with all the other forms of musical acitivity. In the Girls' School some work was done with the Recorder, both as a genuine musical instrument in its own right and as an aid to music reading. "Music and Movement" formed another means of expression for the girls.

Both schools devoted some time each week to guided listening. The concentrated periods were very short at first - of less than a minute's duration - but were gradually increased to a maximum

* It was recognised that the building of an adequate song repertoire for the class could not be delayed until all the children were able to read at sight the new songs introduced to them and so many melodies were learnt by rote. This seemed the wisest plan, for the slight background of all Groups suggested that their essential need was to absorb as much beauty, in all its manifestations, as possible, rather than to accept a concentrated infusion of technical knowledge. The length of time involved in learning a song, and the consequent boredom which can kill a creation at birth, was lessened by the help of the 'leaders' whose reading ability was better than that of the rest of the class because of the private instrumental tuition they had received. In our Cathedral choirs the value of such knowledge is recognised and made use of to the full.

of 7 - 10 minutes. The listening material used throughout the experiment was varied and included music as different as the Minuet from Handel's Overture to "Berenice" and Danny Kaye's recording of "Tubby the Tuba". The girls' natural interest in ballet and dancing led to a concentration on Dance Forms through the ages and in the works of the great composers. In the Boys' School the main interest became focussed on the actual instruments used in the orchestral works heard on gramophone records, particularly on the mechanical construction of the instruments, and considerable curiosity was evinced in the workings of the gramophone itself. In the Girls' School a gramophone record of a particularly lovely song or orchestral work was often played after the Morning Assembly and the boys always had music played to them on the piano after their Assembly on alternate mornings. The girls usually remained seated to listen, the boys used their music as a background to their movement from the Hall.

Music writing as well as music reading was attempted, primarily for the taking-down from dictation of short melodic phrases or rhythmic groupings, but also occasionally for the notation of small melodies created by the children themselves. With all Groups the singing and clapping back of melodies and rhythms was a regular feature, and elementary conducting

was encouraged, both as a means of training the awareness to pulse and pulse-groupings and as a help in developing muscular control.

No separate lessons were spent on "Theory" since technical instruction divorced from musical activity is barren, and tends to destroy the lively interest in the children before the real joy of music-making has been experienced. The teaching usually included in such lessons (e.g. clefs, keys, time signatures, dynamics) was not neglected, but was integrated into more purposeful activity.

Wherever possible, the work of the music lessons was linked up with that being done by other teachers.

Chapter X

Tests of Musical Awareness (i).

The tests were constructed after the available tests of musicians, such as those detailed in the syllabuses of all the various Local Examination Bodies (e.g. The Associated Board of the Royal Schools of Music), and many of those devised by psychologists and concerned specifically with aptitude, had been examined.

A largely unbridged gap exists between musicians and psychologists in this matter of testing. The tests of musicians are primarily empirical and traditional, usually for grading purposes or for the awards of scholarships and professional qualifications. Inevitably they involve acquired knowledge and, especially in aural and viva-voce testing, depend to some extent upon the whim and mood of the examiner at any particular moment in the examination. They are generally individual tests and are not standardised.

The psychologist, on the other hand, has often been too little concerned with the musical aspects of the tests and has used material with no immediate relation to music as the musician understands it - although it may involve certain "atomistic" elements which are essential to music.

An example of the use of non-musical material is Item No. 2 - "Time Test" of the original version of the Seashore Tests, "Measures of Musical Talent." The directions for this test read as follows:-

"Three clicks are given; the subject is asked to state whether the interval of time between the second and third is longer or shorter than between the first and second". This is completely remote from the conception of music which judges a note only in relation to the phrase as a whole, not in isolation nor as mere noise. Seashore's revised Time Test (No. 2) replaces empty time with filled time, but this still fails to meet an essential musical need, and is hardly likely to attract the interest of the most musical subjects.

In certain respects the tests of my own construction bear some resemblance to those of Seashore, but they are more nearly based on the battery compiled by Wing.[83] Wing rightly insists that a series of objective psychological tests dealing with musical factors should be "accepted in their basic principles to musicians". It is claimed that the tests to be described are in accord with that assertion.

In a few details the tests differ from the sets of both Wing and Seashore. The form in which they were finally recorded is the result of experimentation with various kinds of material during the first term's teaching in both Boys' and Girls' Schools.

The piano, violin, recorder and human voice, the four sound-producers with which the children were most familiar, were used in the tests. The tests were recorded for convenience and for

uniformity of presentation as the pianos in the two schools varied appreciably in quality.*

They were played to the children on an electric gramophone during the morning sessions, and each test was repeated. In order to keep the length of listening within the physical limits of both Groups, but particularly of Group II, only eight items were included in each test. The conditions of the testing were as near as possible to those of any other examination.

The instructions before each test were printed on the papers on which the subject was to write the answers. They were also read aloud by the investigator, as some of the children were unable to read a simple sentence adequately. Even with such reading and the use of the simplest language, there was a danger of lack of understanding and so technical terms were avoided.

The instructions as printed on the subjects' answer papers are added at the end of this chapter.

Eight tests were constructed to embrace the various elements essential to musical structure quoted in Chapter II, and to "cover a sufficiently wide sample of musical talent" -

* From observations made during these tests when a gramophone only was used and during other tests given at a piano, it was clear that a more intelligent interest was stimulated, especially among the gifted musical children, by the performance of a person in the actual room than by a voice or the sound of an instrument merely coming "out of a box".

the fourth of the criteria which Wing suggests must be satisfied by a series of psychological tests before they are acceptable to musicians:-

I. Pitch Discrimination Test.

II. Melody Test.

III. Rhythm Test.

IV. Memory Test.

V. Two-Melody (Counterpoint Test).

VI. Timbre Test.

VII. Harmony Test.

VIII. Phrase Structure Test.

In Test I - "Pitch Discrimination Test" - eight pairs of notes were played in various registers on two instruments, the piano and the violin, and the subject was asked to state whether the second note of the pair sounded was "higher" or "lower" than the first. It was assumed that at this stage the child would understand what was meant by "high" and "low" in relation to pitch, but a few examples were given to dispel any misunderstandings. An awareness of pitch relationships is essential to any true conception of musicianship.

In Test II - "Melody Test" - eight melodies were played three times each on the piano or violin and three graphic representations of the movement of notes in each melody were presented to the subject on the answer page.

One of them was an accurate contour of the melody played. The subject was asked to place a cross beneath the shape which he felt to be the correct contour of the melody heard. Each fragment was played three times so that a different contour could be traced by the subject with each new playing. The use of such graphs was employed after much consideration. The writing down in musical notation of the smallest group of notes involves acquired knowledge and so favours the child who receives private instrumental or singing teaching, or who comes from a Primary School in which emphasis is laid upon such work. The contouring of the melody itself by the subject might have produced results which could not be measured sufficiently accurately for statistical purposes. It was essential that the subjects should understand how melodies could be expressed in terms of a contour before this test was attempted.

Each of the eight musical fragments included in this test was a complete melodic entity. No. 1 was the opening bar of the French folk tune, "Frère Jacques", No. 2 was the musical motto of a current B.B.C. programme, and No. 8 was part of a theme in the fourth movement of Tchaikovsky's Symphony No. 6 - "Pathétique". The remaining items had no known connection with any music which might be familiar to the subjects.

The test was included, and followed that of Pitch Discrimination, because it was recognised that an awareness to the direction of the movement of notes "up" and "down" is essential if music is to be more than a collection of unordered spasmodic sounds.

Test III - "Rhythm Test" - presented to the subject eight pairs of phrases each of which was played on the piano and violin in two different ways. He was asked to state which playing seemed to be more fitting to the melody, "A" being written on the line provided if the first was more fitting, "B" if the second. In the two playings the accents were in different places, but in only one of the two were they so arranged that the groupings created by accentuation contributed satisfactorily to the build and Rhythm of the whole phrase. For over three hundred years it has been conventional to use bars of determined length to aid such grouping and little sense can be made of a piece of music unless the place of these bars within the melodic shape and structure as a whole is recognised - however artificial such bar divisions may seem to the cultured musician.

No well known melodies were employed as their mutilation for the purpose of creating false accentuation would have been an operation distasteful to a musician, however worthy the end envisaged. But an idiom with which the subject was familiar in his songs and hymns was used.

Test IV - "Memory Test" - was based on Test No. 5 of Seashore's Tests and Test No. 3 of Wing's battery, which in its turn was based upon that of Seashore. This is one of the most satisfactory tests of Seashore's battery, probably because as Wing suggests, it is closer to actual music than some of the other tests. Eight short

melodies were played on the piano three times each. When the fragment was played the third time one of the notes was altered. The subject was asked to write on the line provided the number of the altered note. A line of five figures - the maximum number of notes used in any melody - 1, 2, 3, 4, 5 - was provided on the answer paper so that the subject could follow along it, if it was any help, during the playing of the melody. The subject was expected to memorise the fragments during the first two playings in order to identify the altered note in the third playing. Five of the phrases were in the major mode, three in the minor.

In his original version Seashore used a number of consecutive notes, purposely selected to form no melodic line, and in his revised Tests he made only the slight alteration of replacing the previous semitone step with whole tones. In both cases he played the notes to be memorised only once. Wing made all his fragments melodic and played the initial version of each of them twice. Each group of notes used in Test IV of the investigator's series formed a melodic entity, although they were not recognisably connected with any familiar music. The number of notes was reduced from Wing's maximum of ten to a maximum of five, as experimentation suggested that this was the number which the children of Group II could retain with any ease.

In Test V - "Two Melody (Counterpoint) Test" - eight phrases of not more than three bars each were played on the piano, the upper melody by the pianist's right hand, the lower melody by his left hand.

The association of the right hand with "higher" and the left hand with "lower" notes was one which could be legitimately expected from children who had first had their attention directed to it. One of the hands remained stationary for at least two crotchet beats while the other moved slowly. The subjects were asked to discriminate between the two lines of sound by stating which hand moved first. "A" was to be written on the line provided if the right hand moved first, "B" if the left hand made the initial move. It was carefully considered whether two separate instruments or two voices of different quality should be used in this test instead of the piano, but either of these combinations would have added a new element - that of "timbre". The hands were used with varied spacings, sometimes more than an octave apart, sometimes within the same octave; four items employed both the Treble and Bass Clefs, two only the Treble, and two only the Bass.

When a musician wishes to test the ability of a child to hear the upper or lower of two melodies, he usually does it by asking the child to sing back to him one of the parts, or to write down the part required in musical notation. The first could not have been taken as a standardised group test and the second involved acquired technical knowledge.

Test VI - "Timbre Test" - used four separate "sound-producers" - the piano, violin, recorder and male voice - in various combinations, and the subject was asked to state the number (not the quality, which

would have involved acquired knowledge of instruments) of the sounds heard. The violin used "double-stopping" on two occasions and in one item the piano played two notes together. The maximum number of notes sounded at one time was four, the minimum, one. Four items used the Treble Clef only, one item the Bass Clef only, and the remaining three the Treble and Bass Clefs together.

In Test VII the subject was asked to state which of two harmonisations of the same melody he preferred, using the letter "A" if the first playing was preferred, "B" if the second. As the words "harmony" and "harmonisation" were not understood by the children, the phrase "different notes under the melody" was included in the instructions, and an example was given of two different harmonisations of the same well-known tune. There are no "correct" or "incorrect" methods of harmonising a melody, but over a period of time certain harmonic progressions have become accepted by musicians generally as being appropriate for certain types and styles of melodies. These were used in one of the versions of each part to be played. In the other versions they were discarded or distorted to an exaggerated degree. The orthodox harmonisation used an idiom familiar to the children in their songs and hymns. In comparison with it the alternative was expected to sound strange, if not positively ugly.

Each harmonisation, although played on the piano, was in four parts, corresponding to the usual four voices of a vocal

quartet; soprano, alto, tenor and bass; and were not merely an added accompaniment. None of the melodies, which were of two or three bars length, were familiar. Six were in the major, two in the minor modes.

Test VIII - "Phrase Structure Test" - presented two versions of the same phrase played on the piano or violin, and asked the subject to state his preference, "A" being used for the first playing, "B" for the second. The melody was identical in both cases, but in each version the "dynamics" (called by Wing "intensity changes") were used differently, with the result that the phrase assumed entirely different aspects. Each version also used "staccato" and "legato" in different ways. As these were alternative "interpretations" (although to a musician one was infinitely preferable) and not actual mutilations of the written music, phrases from composed melodies, with some of which the subjects might be familiar, were used:-

(i) La Volta - W. Byrd.

(ii) Past Three O'Clock - English Traditional Carol.

(iii) The Vicar of Bray - English National Song.

(iv) My Love's an Arbutus - Irish Traditional Song.

(v) Sandmanchen - Brahms.

(vi) March from "Scipio" - Handel.

(vii) Ayre in D. minor - Purcell.

(viii) Rocking - Czech Traditional Carol.

Although no dogmatic rules exist for the use of dynamics, and even indications on the musical score cannot be precise, there is a general degree of agreement amongst musicians about the most suitable and satisfying methods of interpreting various styles of music. It is apparent, for instance, to a person who is at all sensitive that the style of the March from "Scipio" and the Czech "Lullaby" require entirely different treatment.

Tests III and VIII were primarily tests of Appreciation,* as both assessed the subject's discrimination between two methods of performance of the same melody. Appreciation is the essential attribute one would expect to find in every truly musical person. It is also an extremely difficult quality to estimate quantitatively - if indeed such assessment is ever possible. In the two tests quoted above (as in Test No. VII - "Harmony Test") the standard of "correctness" used was that of an adult musician employing an orthodox idiom based on a traditional and personal judgment of "fitness". The musically intelligent child who is also an individualist may well have preferred the "bad" version to the good because of some slight idiosyncrasy it possessed which made an immediate appeal to him.

Wing's example in adding to each of the instructions in his

* The term "Appreciation" is here used in the same Dictionary sense as that of its verb "to appreciate" - "to estimate worth"...."to estimate aright"....."to be sensitive to".

Tests "If in doubt, then guess", was followed in my own battery. The direction was, I believe, obeyed implicitly by many of the subjects in the tests relating specifically to Appreciation!

The total time taken by all the tests was about fifty minutes. It was thus possible to give them to each Group at one sitting. There was a keen interest and no apparent flagging throughout the whole testing.

One mark was awarded for every correct answer. It was realised that in Tests III, VII and VIII, where paired comparisons were involved, there was no "correct" answer, only an indication of preference, but in these Tests a mark was given if the choice of the subject agreed with that of the investigator.

After the tests had been applied it was realised by the investigator that they were not ideal in their construction. Some of them appeared too easy to give a wide enough scatter for statistical purposes, and the limited number of items and of alternatives provided in each test, although sufficiently large to task the concentration of retarded children, allowed the possibility of getting a sizable score by chance. The investigator became increasingly aware of the statistical problems involved and employed only the simplest techniques. Owing to the irregularity of the frequency distribution the 't' technique was not used: the Chi-Square Test was used as a test of significance. Cutting points were somewhat arbitrarily determined, the principle followed being to get the modal frequencies as far as possible on opposite sides. No correction for continuity was made.

It should be stressed that these Tests of Musical Awareness were originally designed as simple tests which could be used by the classroom teacher to discover how far his pupils (backward and normal) were aware of the essential elements in music. If the results of the retarded children differed considerably from those of the more intelligent pupils then it was obvious that a new approach to music teaching must be found for them. If, on the other hand, no appreciable difference was noticeable in their awareness to the elements of music inherent in all their music-making, it would seem that a similar syllabus and method of teaching to that already designed for Group I would satisfy their needs.*

In Test I, Pitch Discrimination Test, 14 girls of Group I scored the maximum mark of 8, and 5 scored the next mark, 7. 4 girls of Group II scored the maximum mark and 6 succeeded in obtaining 7. 17 girls of Group I scored 6 and the remaining girl only scored I. (This was probably due to a misunderstanding of the instructions as the subject concerned showed no lack of musicality in the general musical activities of the class). The 20 girls of Group II who had 6 marks or below were spaced over a wider range, 10 girls scoring 5, and the lowest mark being 2. There was no zero score. This result was significant only at the 0.30 level.

* As a result of the present investigation, it is intended to remodel and increase in variety and discrimination the "Tests of Musical Awareness."

There was a slightly bigger difference between the ability of the two Groups of boys in this particular test. In Group I 14 boys scored the maximum mark and 15 registered 7. In Group II the highest two marks, 8 and 7, were shared equally by 10 boys. In Group I, 3 boys scored lower than 6, in Group II, 20. The lowest mark in Group I was 2, in Group II, 1. The result was significant at the 0.01 level.

It would appear from the results that this test was too easy for the subjects concerned, and that within the test there was insufficient variety of items. The items differed slightly in standard; the smallest intervals caused greater difficulty than those in which the notes were far apart. Pitch differences at the extremes of the piano were noticed by fewer members of Group II than of Group I.

The results obtained would suggest that the retarded children as a group possessed to a satisfactory degree one of the essential elements, pitch, upon which a musical training could be built.

In Test II, Melody Test, which again involved the subjects' sense of pitch and with it their ability to recognise the contour of a melody expressed graphically, the difference between Groups I & II was very slight, although the scores in this test were generally smaller than in Test I. In the Girls' School no member of either Group registered the maximum score and a zero score was made by a Group II subject. In both Groups 12 girls scored 4 or over.

The result of the test was significant only at the 0.10 level.

2 boys of Group I scored the maximum mark of 8, and 4 other boys gave 6 or 7 correct answers. The highest score in Group II was 5 (4 boys), 1 subject was unable to give any correct answer and 8 others only scored I. The lowest score of Group I, made by 7 boys, was 2. The result was significant at the 0.01 level.

There are certainly greater extremes of scores in this test than in the previous one, but this may well have been due to the visual element involved in the testing rather than to an inability of the subjects to follow aurally the shape of the melody. The children were accustomed to shaping phrases with their hands and to drawing the contours of melodies on the board, but not all children (or adults) easily associate sounds with shapes. A completely satisfactory group test to assess a subject's ability to follow the pitch variations of a melodic line has yet to be constructed.

From the present results it would appear that only a few of the retarded children found it difficult or impossible to recognise the shape of a melody in graphic form, and, as has been stated, so many other factors were immediately involved when the visual element was introduced in testing, that it would seem unwise for the practising teacher to modify his scheme of pitch training for retarded children purely on the results of such a test.

Test III, Rhythm Test, was essentially a test of "Appreciation", and its limited number of items and alternatives made the guessing which the subjects were invited to indulge in if they were in doubt,

quite a practical proposition. The results in both schools were significant only at the 0.30 level, and the investigator remains doubtful as to their real value, as he becomes more firmly convinced of the difficulties involved in an attempt to assess "appreciation" of beauty in any of its manifestations. In the Girls' School one subject scored the maximum mark. She was in Group II and was the only pupil whose verdict agreed with that of the investigator. In the Boys' School one of the most intelligent boys in Group I disagreed in every case with the judgment of the investigator! Between these extremes the scores of both Groups were fairly well balanced, although in both Schools the retarded pupils appeared to register slightly better scores than the members of Group I. In the Girls' School, 19 of them, as compared with 16 "normal" girls, had a score of 5 or over: in the Boys' School, 15 retarded boys and 12 "normal" boys were in this category.

The results suggest that if an awareness to the appropriate use of rhythm in a composition can be quantitatively assessed the retarded children possess it in as great a measure as their more intelligent companions.

Closely related to Test III was Test VIII of the same battery - the Phrase Structure Test. This was also essentially a test of "Appreciation" and involved similar musical elements with the emphasis placed upon phrasing. (The investigator's doubts as to the validity of a quantitative assessment of these elements remain).

It is interesting too, to find the results somewhat similar to those of Test III, although in addition to his loyal subject from Group II in the Girls' School, the investigator was given support in his judgment as to the most appropriate versions of the melodies from 1 boy in Group II and 2 girls in Group I. 1 boy in Group I disagreed with all but one of his judgments and 1 girl in Group II agreed with none of them. There is a slight difference between the Groups: 9 boys and 14 girls of Group I scored either 7 or 8 as against 4 boys and 8 girls of Group II. The great majority of the other pupils scored between 3 and 6 inclusive. The results were significant at the 0.05 level in the Girls' School and the 0.01 level in the Boys' School.

Again, if the results of such a test can claim to be of real musical and educational value, the children of Group II would appear to be not appreciably inferior to those of Group I.

As might be expected, Test IV, Memory Test, showed a much greater degree of difference between the Groups, and the results in both schools were significant at the 0.01 level. In the Girls' School 9 subjects in Group I and only 1 in Group II scored the maximum mark: in the Boys' School the superiority of Group I was even more marked, with 23 subjects from this Group, as compared with no subject from Group II, registering a maximum score. In the Boys' School only 1 boy from Group I scored 6 or under, in Group II, 29: in the Girls' School the marks were more widely spaced, 14 of the subjects of Group I and 24 of Group II being in this category.

A weak memory is one of the factors which militates most strongly against the progress of the retarded child in all his learning; music for reasons stated elsewhere in this thesis particularly requires a reliable aural memory.

The results of Test V, Two-Melody (Counterpoint) Test, were more significant in the Boys' School (at the 0.01 level) than in the Girls' School (at the 0.30 level). In the Boys' Groups, 14 of the retarded subjects (as compared with only 4 members of Group I) registered a score of 3 or below: in the Girls' School, 11 subjects from Group I and 8 from Group II came into this category. 1 boy from Group I scored the maximum mark of 8: the highest mark in the Girls' School was 7, registered by 1 girl from each of the Groups.

As in the Pitch Test (No. 1), the most difficult items proved to be those in which the intervals between the notes were smallest. The results suggest that although the retarded children may find it more difficult than the members of Group I to take part in musical activities involving more than one melody (e.g. part-singing) their weakness is not sufficient to discountenance completely the tentative introduction of some simple two-part work (if only in listening) into the syllabus. The girls would probably find it easier than the boys.

Not entirely unconnected with the previous test was Test VI, Timbre Test, a test which all Groups found reasonably difficult, and the results of which were significant at the 0.01 level in both schools.

From the scores registered it would appear that the retarded children again found it more difficult than their fellows of Group I to discriminate amongst sounds when they were played together. 21 of the boys of Group II scored 3 or below and 9 of these were zero scores: 10 of the girls from this Group scored 3 or below although there were no zero scores. In Group I only 3 boys and 7 girls scored 3 or below, and 1 subject of each sex scored the maximum mark of 8.

Test VII, Harmony Test, again involved the element of "Appreciation" - this time of the fitting use of harmony. The results were of greater significance in the Boys' School (at the 0.01 level) than in the Girls' School (at the 0.70 level). In Group I, 15 boys registered the maximum score, and 9 scored 7. In Group II of the same school only 3 boys registered the maximum score, followed by 7 boys scoring 7. A marked difference between the Schools was shown in the results of this Test. Only two girls from Group I and one from Group II scored 8, although 4 retarded girls scored 7 as against 1 from Group I. In the Boys' School, 1 subject from Group I and 2 from Group II had scores of 3 (the lowest score): in the Girls' School 5 members of Group I and 6 of Group II had scores of 3 or under. No zero score was registered.

The same doubts as have been expressed regarding Tests III and VIII were felt by the investigator over this test with its scope for "guessing". But with this proviso in mind the retarded children

do not appear unduly inferior to their fellows from Group I in their awareness to the appropriate use of the type of harmonies to which they have become accustomed in their school music-making.

The results of this battery of Tests, although they are recognised to be far from ideal from the point of view of statistics, would suggest that the amount of difference in the awareness to the musical elements shown by the subjects of Groups I and II is not sufficiently great to discourage the practising teacher in his approach to the retarded children, nor to demand an elimination of many of the present musical activities as irrelevant to the needs of these children.

It is difficult to estimate how far the difference of school backgrounds, general and musical, affected the results. The present results suggest that the biggest extremes of awareness and ability were in the Boys' School, Group I doing better than the corresponding Group in the Girls' School and Group II doing generally worse. The tests were given in exactly the same way in both Schools and the teaching was identical, except for the specialised activities of the piano and recorder classes and the different choice of songs for the two sexes.

The frequency distributions for the battery of tests described above are printed as Appendix G.

TEST INSTRUCTIONS.

Test I - Pitch Discrimination Test.

Eight pairs of notes will be played to you. Each note will be sounded separately, and each pair will be played twice. If the second note of the pair is higher than the first, write A on the line provided: if it is lower, write B. If in doubt, guess.

Answers.

1._____ 2._____ 3._____ 4._____

5._____ 6._____ 7._____ 8._____

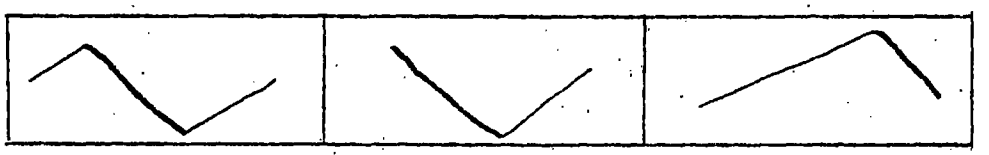
Test II - Melody Test.

Eight short melodies will be played to you three times each. As the notes of these melodies move - sometimes up, sometimes down, - they make patterns, the outlines of which are drawn for you on your paper. Every correct shape is accompanied by two incorrect ones.

With the new playing of each melody follow the outline of a different drawing (beginning with No. 1a) and place a cross under the one you think most nearly represents the shape made by the notes of the melody. If in doubt, guess.

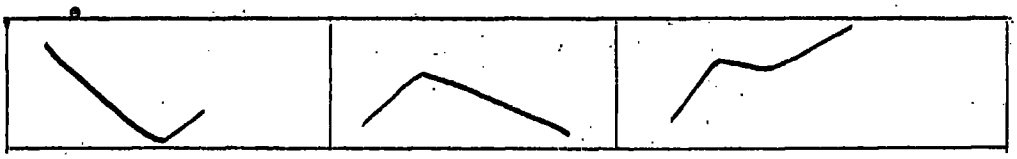
Answers.

1a_____ 1b_____ 1c_____

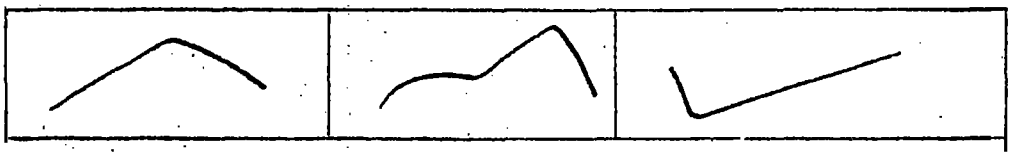


2a_____ 2b_____ 2c_____

3a_____ 3b_____ 3c_____

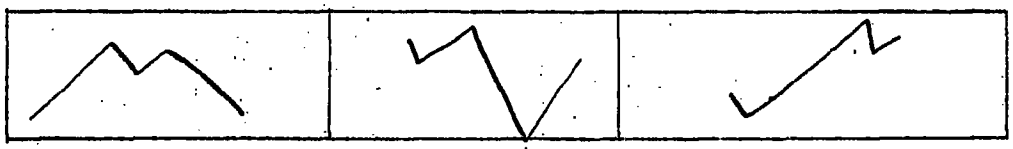


4a_____ 4b_____ 4c_____

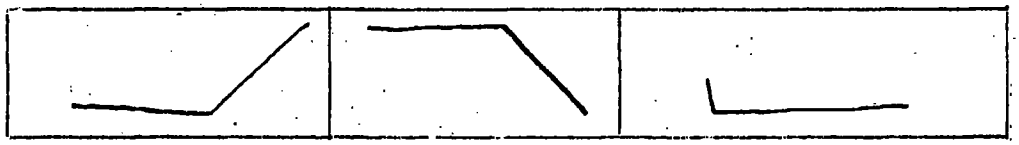


5a_____ 5b_____ 5c_____

6a_____ 6b_____ 6c_____



7a_____ 7b_____ 7c_____



8a_____ 8b_____ 8c_____

Test III - Rhythm Test.

You are going to hear the same melody played twice. The second time the accented notes are in different places. Choose the style of playing which you think better fits the melody and write A on the line provided if you prefer the first, B if you prefer the second. If in doubt, guess.

Answers.

1._____ 2._____ 3._____ 4._____

5._____ 6._____ 7._____ 8._____

Test IV - Memory Test.

Eight short melodies will be played to you three times each. In the third playing of each melody one note is altered. Counting from the beginning of the melody write on the line provided the number of this altered note. If you wish, you may follow the numbers of the notes along the line of five figures on your test paper. If in doubt, guess.

1 2 3 4 5

Answers.

1._____ 2._____ 3._____ 4._____

5._____ 6._____ 7._____ 8._____

Test V - Two melody (Counterpoint) Test.

Two short melodies will be played together; the upper melody by my right hand, and the lower one by my left. If you hear my right hand move first, write A on the line provided: if you think my left hand moves first, write B. If in doubt, guess.

Answers.

1._____ 2._____ 3._____ 4._____

5._____ 6._____ 7._____ 8._____

Test VI - Timbre Test.

You are now going to hear several different sorts of sounds played together. On the line provided write down the number of sounds you hear each time. If in doubt, guess.

Answers.

1._____ 2._____ 3._____ 4._____

5._____ 6._____ 7._____ 8._____

Test VII - Harmony Test.

Eight short melodies will be played to you twice each. On the second playing of each there will be different notes under the melody. Write A on the line provided if you prefer the first playing, B if you prefer the second. If in doubt, guess.

Answers.

1._____ 2._____ 3._____ 4._____

5._____ 6._____ 7._____ 8._____

Test VIII - Phrase Structure Test.

Eight phrases of music will be played to you twice each, the second playing being slightly different from the first. Write A on the line provided if you prefer the first playing of each, B if you prefer the second. If in doubt, guess.

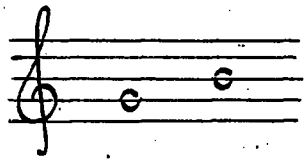
1._____ 2._____ 3._____ 4._____

5._____ 6._____ 7._____ 8._____

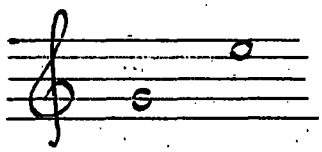
Tests of Musical Awareness.

Test I.

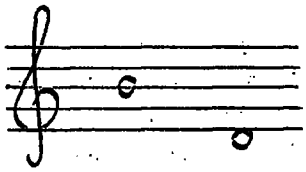
1. Piano



2. Violin

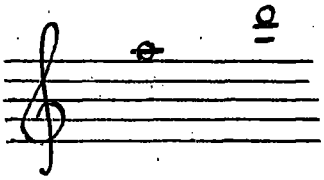


3. Piano

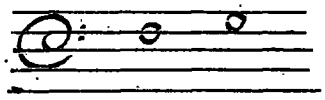


4. Violin

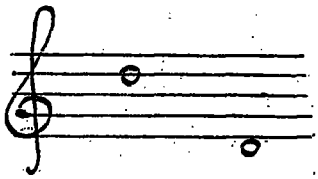
5. Violin



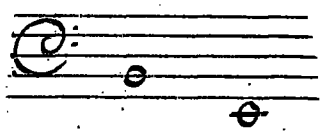
6. Piano



7. Violin

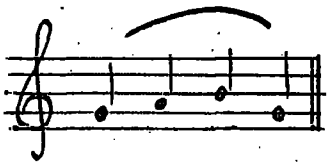


8. Piano

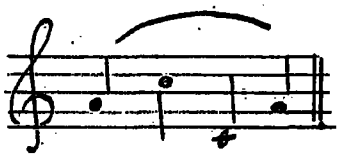


Test II.

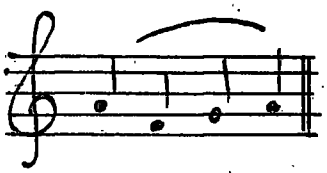
1. Piano



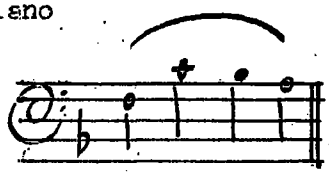
2. Violin



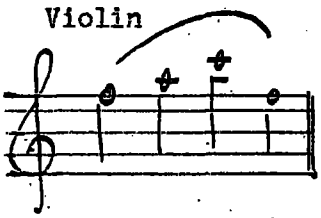
3. Violin



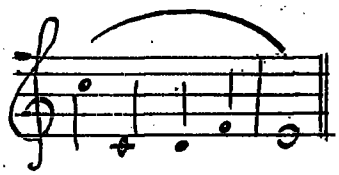
4. Piano



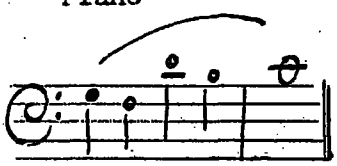
5. Violin



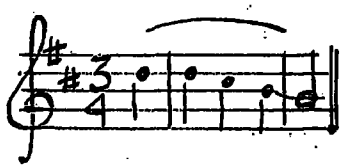
6. Piano



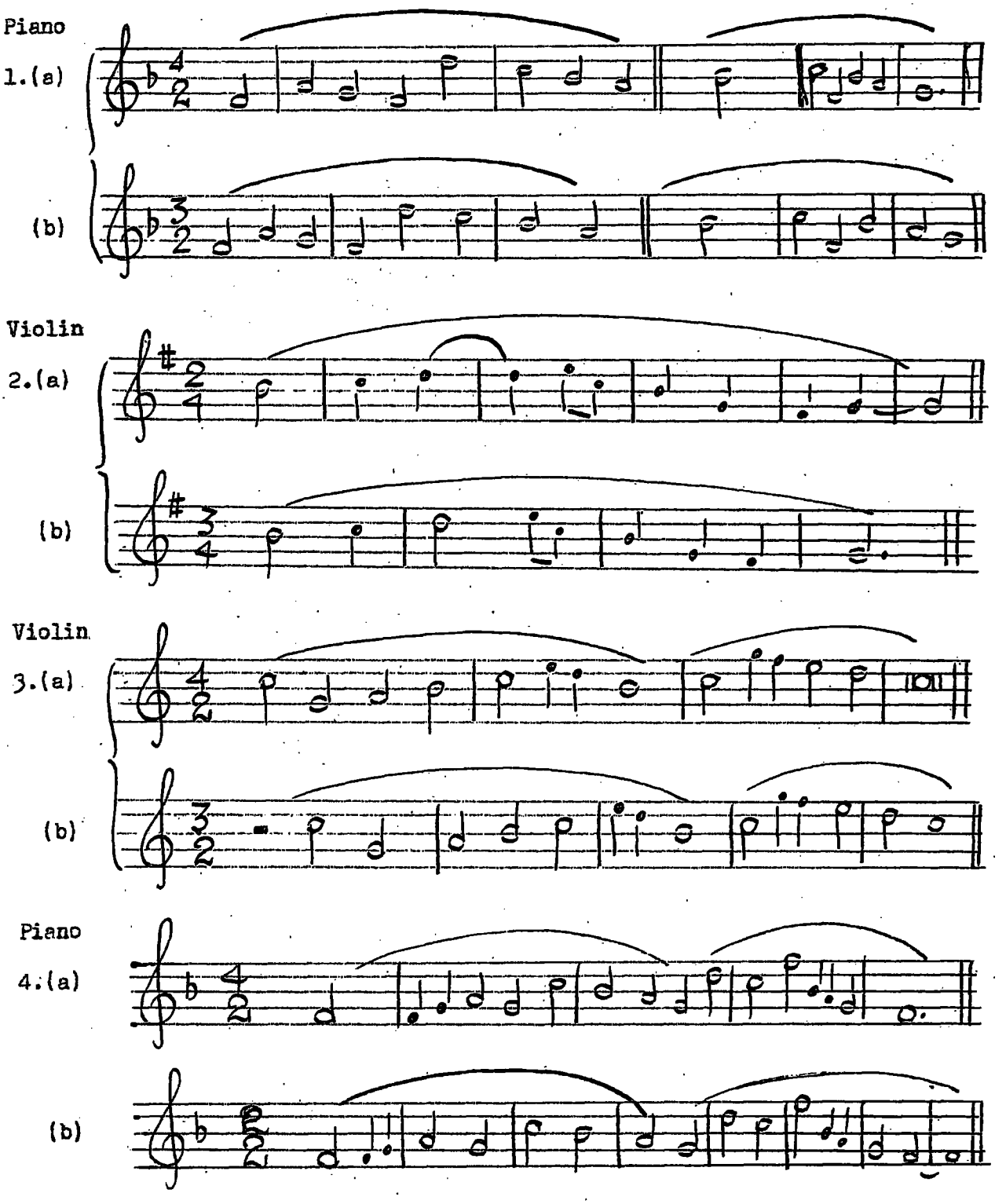
7. Piano



8. Violin



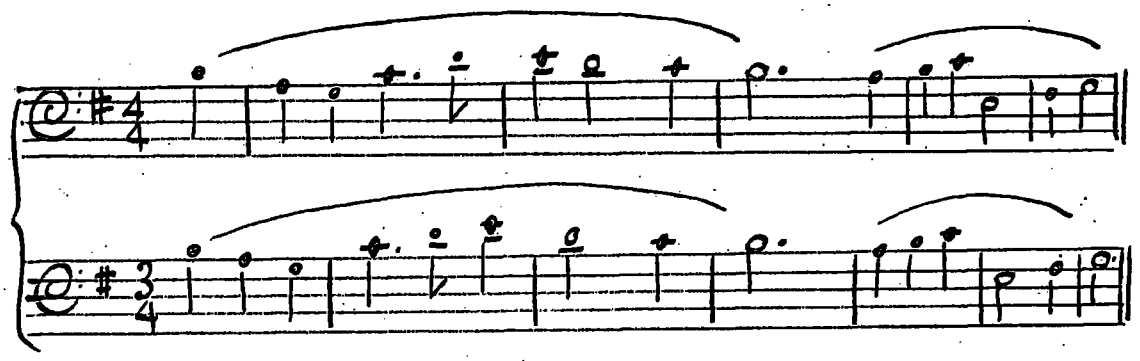
Test III.



Piano

5.(a)

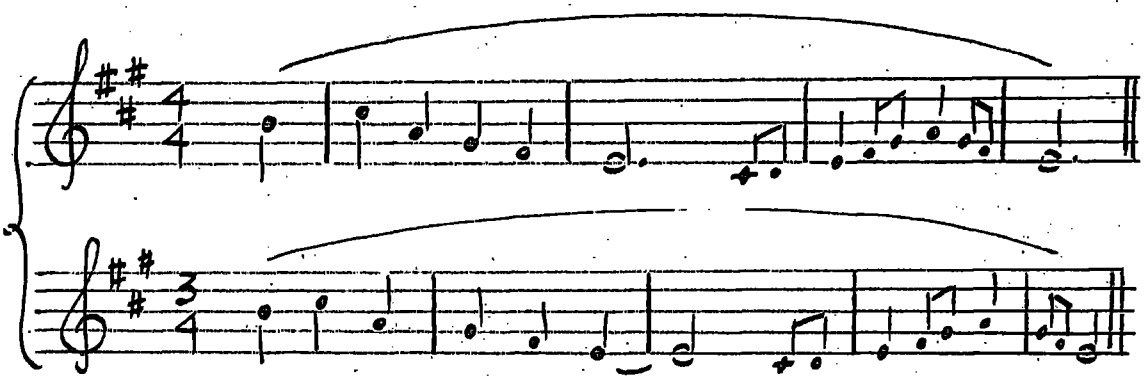
(b)



Violin

6.(a)

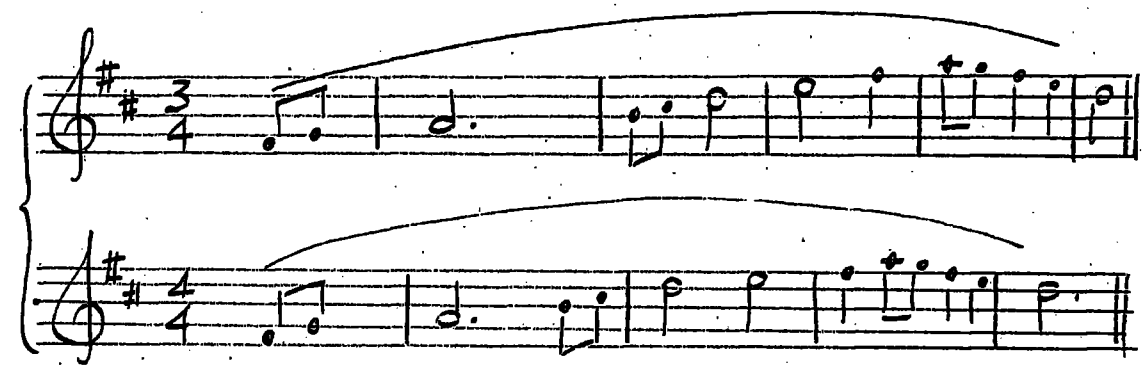
(b)



Violin

7.(a)

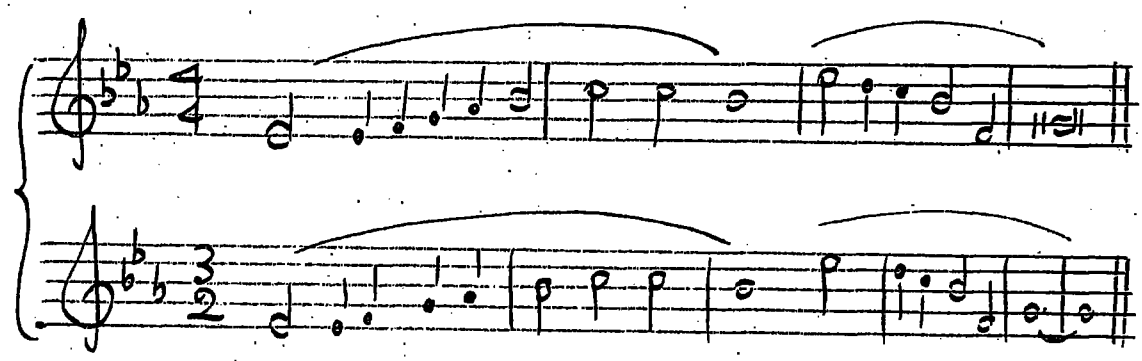
(b)



Piano

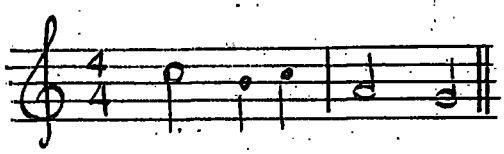
8.(a)

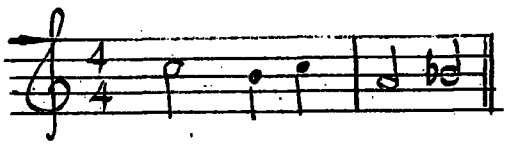
(b)



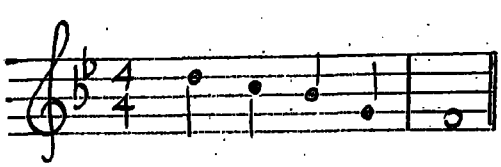
Test IV.

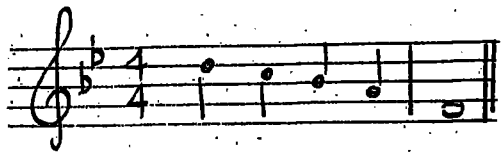
1.



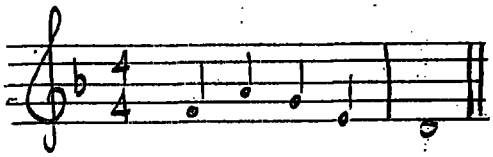


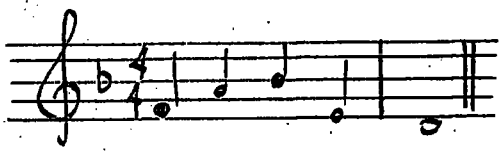
2.



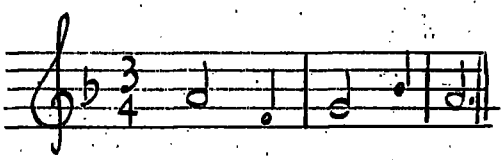


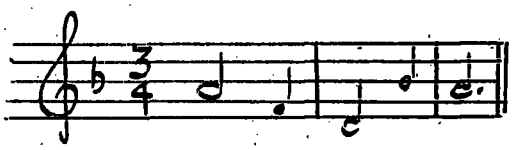
3.



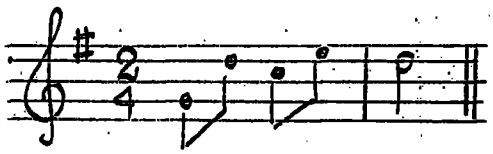


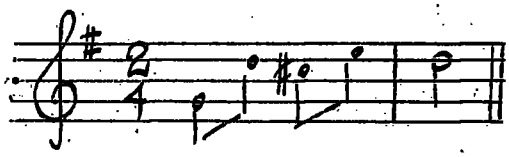
4.



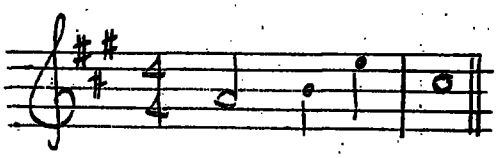


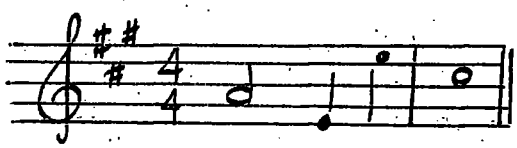
5.



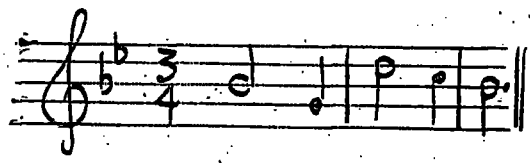


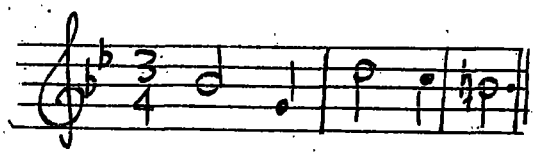
6.



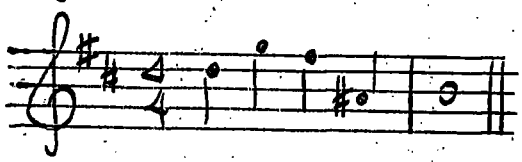


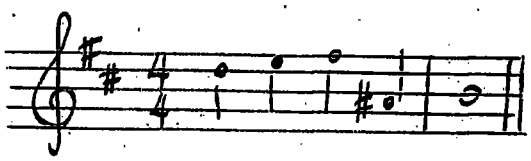
7.



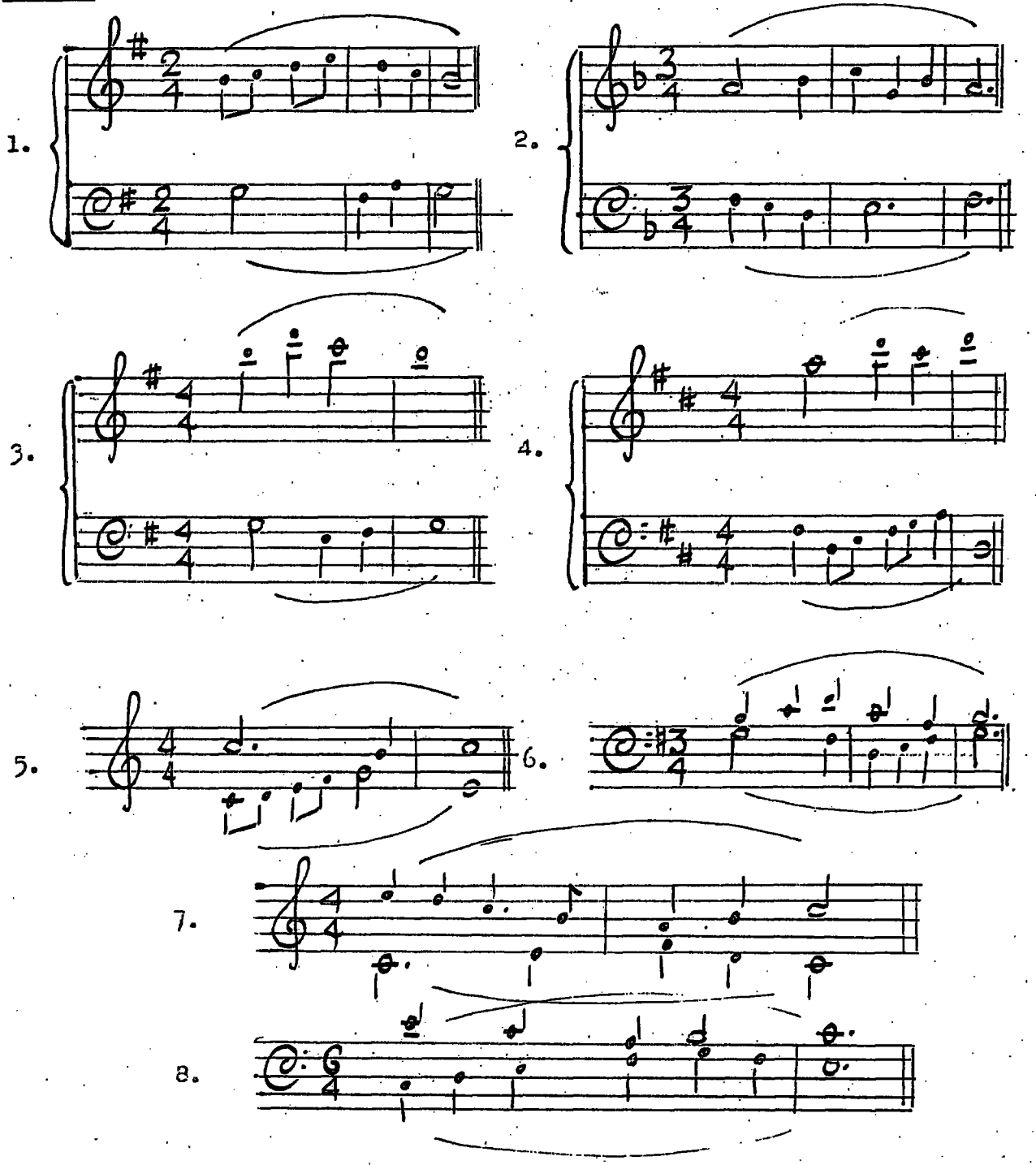


8.



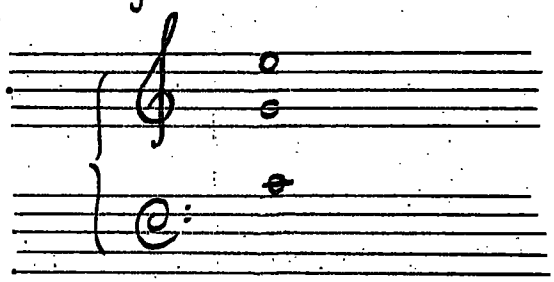


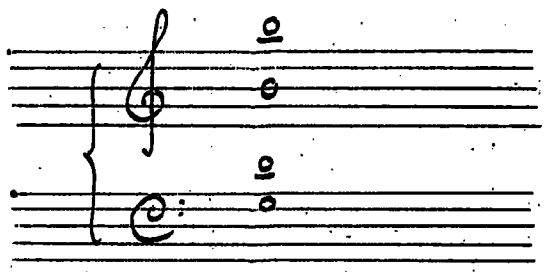
Test V.

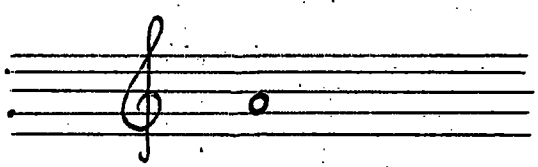


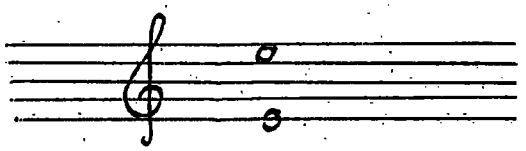
Test VI

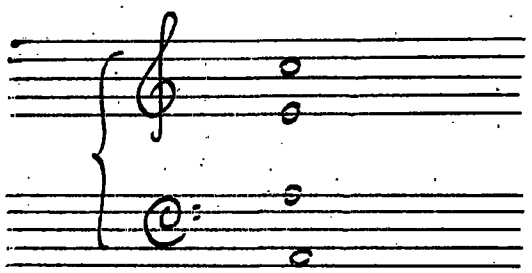
1. 
Violin
Piano

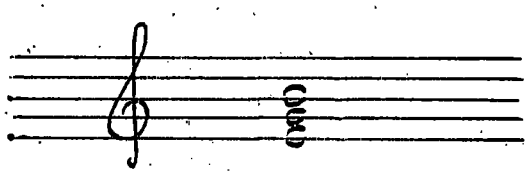
2. 
Violin
Piano
Voice

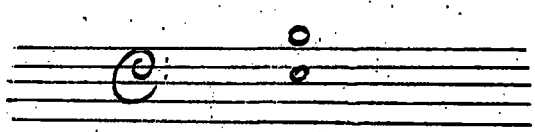
3. 
Recorder
Piano
Violin

4. 
Piano

5. 
Piano
Violin

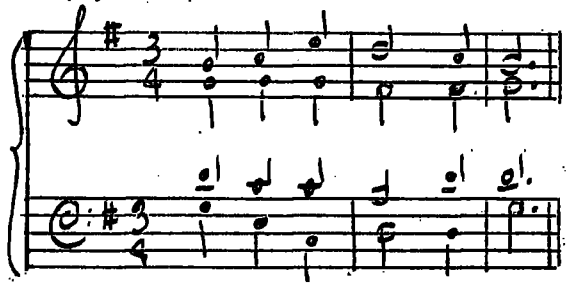
6. 
Violin
Piano
Voice
Piano

7. 
Violin
Recorder
Violin

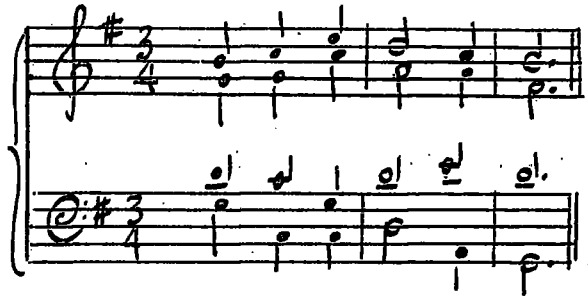
8. 
Violin
Piano

Test VII.

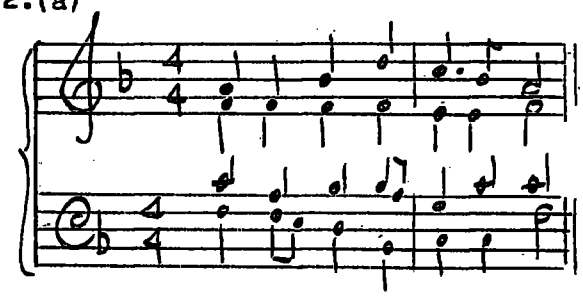
1. (a)



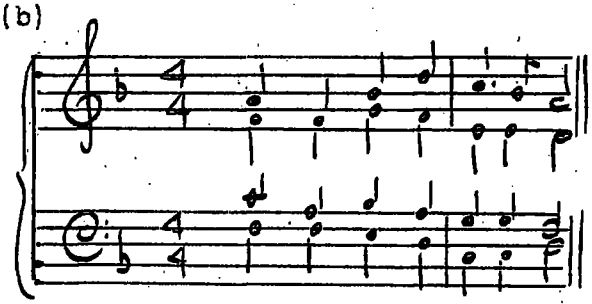
(b)



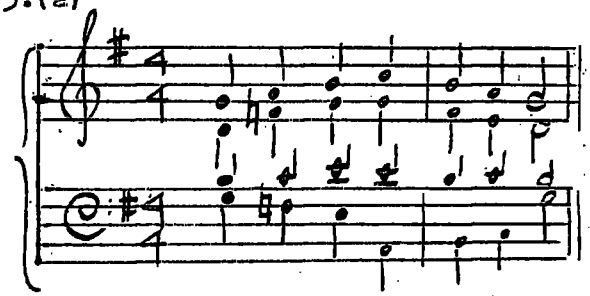
2. (a)



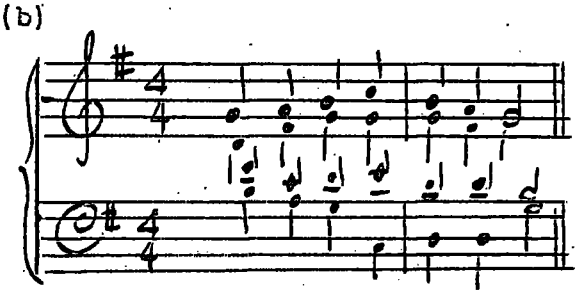
(b)



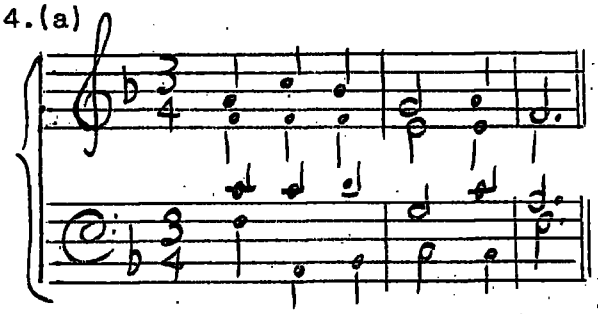
3. (a)



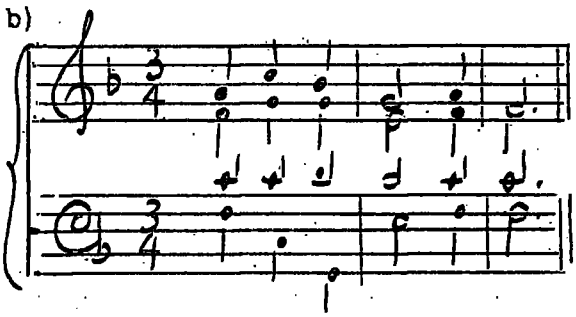
(b)



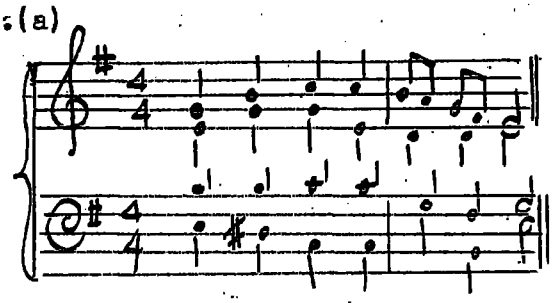
4. (a)



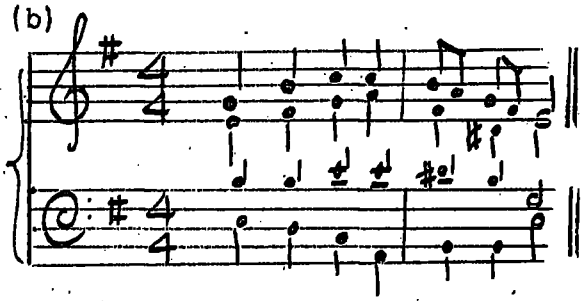
(b)



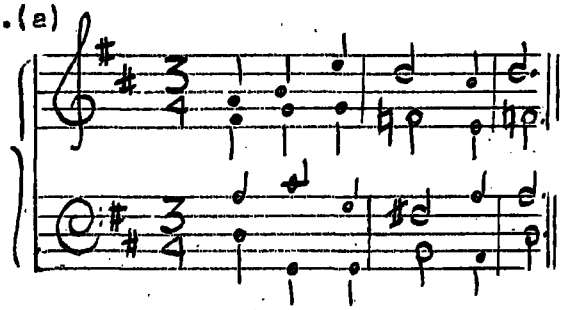
5.(a)



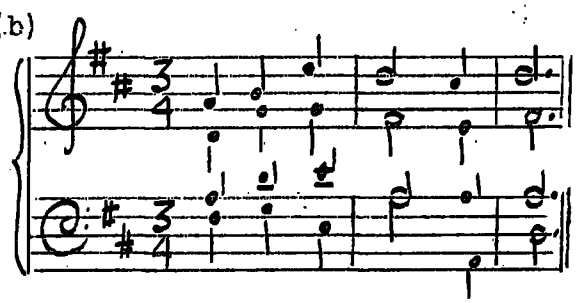
(b)



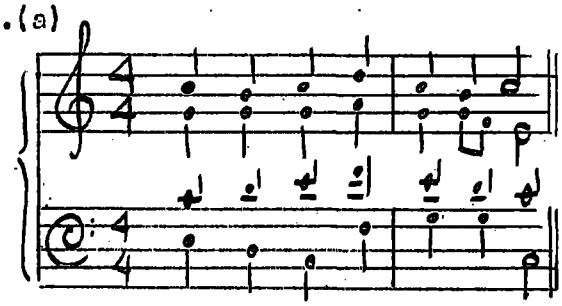
6.(a)



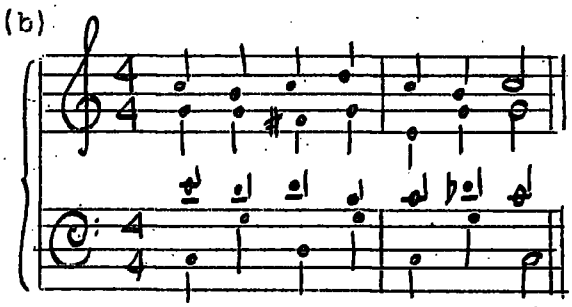
(b)



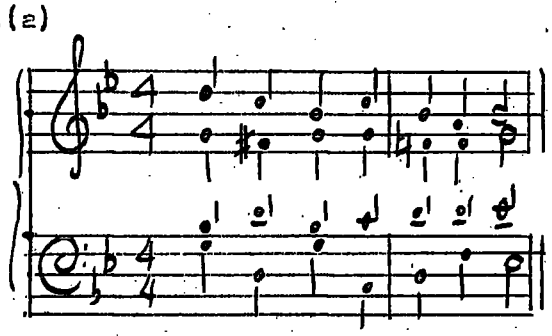
7.(a)



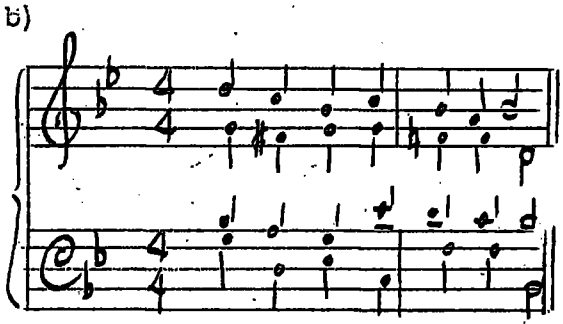
(b)



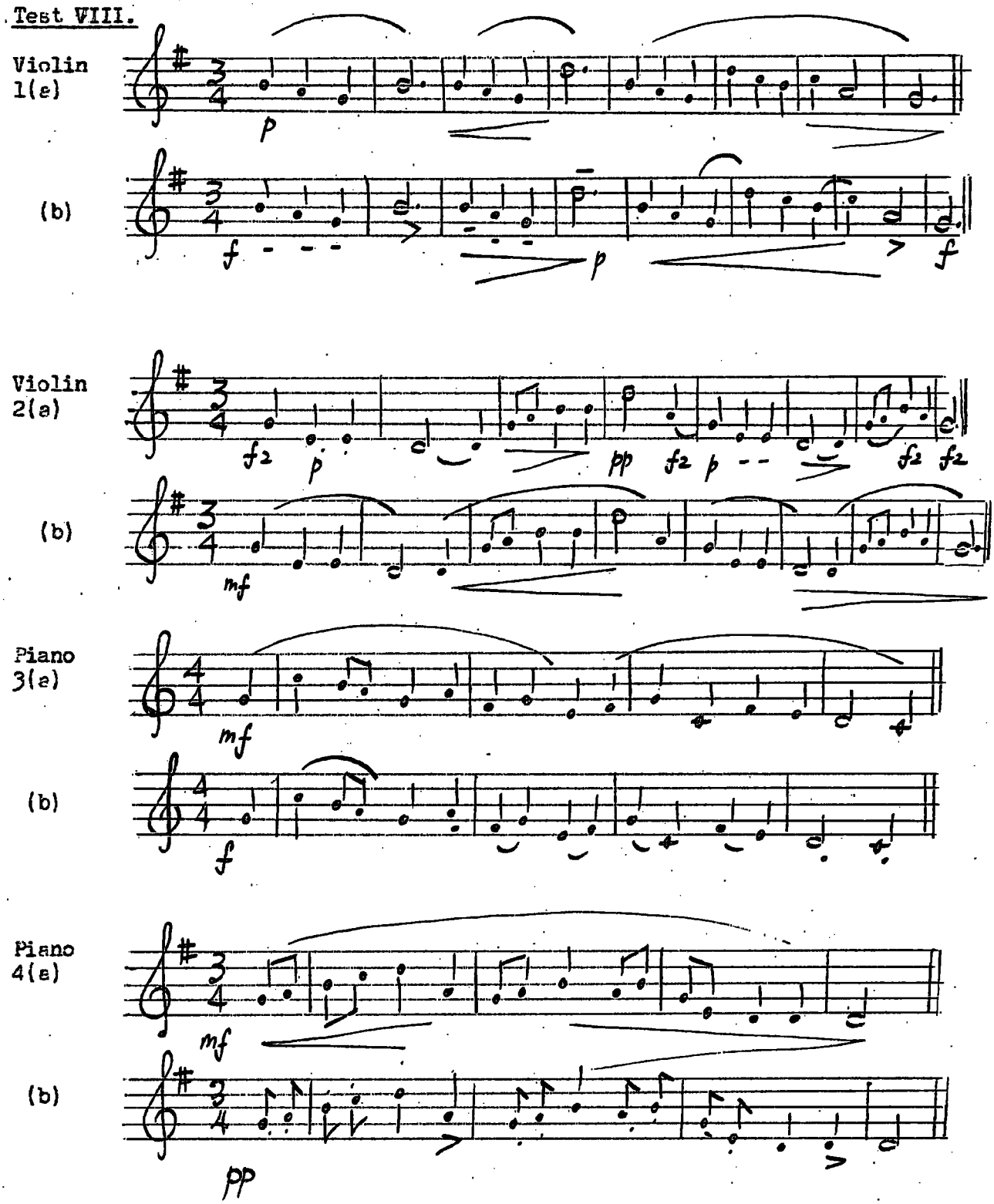
8.(a)

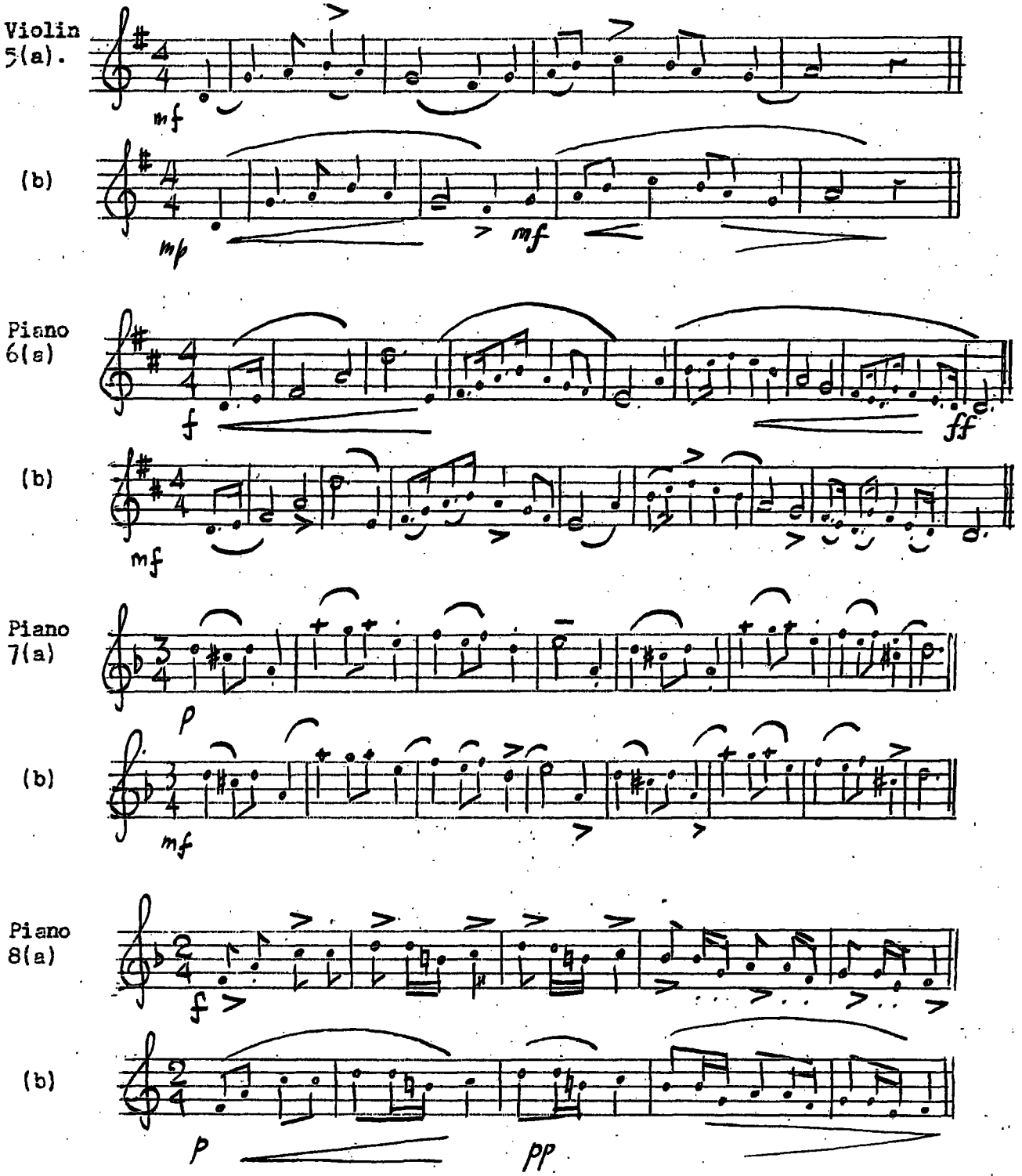


(b)



Test VIII.


Violin 1(a)
p
(b)
f
p
f
Violin 2(a)
f2
p
pp
f2
p
f2
f2
(b)
mf
Piano 3(a)
mf
(b)
f
Piano 4(a)
mf
(b)
pp


Violin
5(a).
mf
(b)
mp
mf
Piano
6(a)
f
ff
(b)
mf
Piano
7(a)
p
(b)
mf
Piano
8(a)
f
(b)
p
pp

Chapter XI.

The Choral Class.

Full participation in choral work of the most elementary nature is denied the child who either has no sense of pitch or is unable to express it vocally.

In order to discover whether the children concerned in this investigation were able to pitch a note which had first been sounded on a piano or by a voice, each subject was asked to sing back to the investigator the note he was playing or singing.* It was important that this should be done immediately, before the element of aural memory entered seriously into the testing.

Only one child, a girl in Group II, proved to be a monotone singer.[/] She was given similar treatment to that suggested by Pollock[60] who had carefully observed and himself given treatment to

* It may be argued that the register of the investigator's voice would be a hindrance to children whose natural voices were treble. In practice this is rarely the case with pupils at the secondary stage who almost invariably imitate the sound produced by the male voice at the octave, and are unaware of their act of transposition. If there seemed to be any doubt in the mind of the subject during the present investigation the note was both sung and played on the piano.

/ Many explanations are given of the existance of such "growlers", some of them relating the defect to environment, others associating it with the slow development of the vocal organs. It is difficult to discover the exact reason unless one is in possession of all the personal details of the child's physical and temperamental make-up and home background. Even then, heredity may be a potent factor.

79 children and 2 adults suffering from singing disabilities including "tone-deafness" during the period 1939-1950. All attempts failed to enable her to produce more than her one bourdon note, and it was concluded that she belonged to the unfortunate small section of the community who are incurably tone-deaf. This did not deter her from joining with apparent enjoyment in the choral work of her Group and she was never restrained from this activity. No attention was drawn to her disability by the investigator or her fellows who accepted her drone effects with the happy tolerance they extended to other disabilities amongst the members of their community.

Such tone-deafness is a misnomer and does not necessarily imply a lack of musical ability in other directions.* Although the girl of Group II referred to above was unable to sing back the note she had heard she was able to find it on the piano and in the original Tests of Musical Awareness she had 75% of the items involving a change of pitch correct. She was not debarred from listening to music.

* Describing the way the paralysed composer, Delius, dictated his music, Eric Fenby writes: ".....Throwing back his head he began to drawl in a loud monotone that was little more than the crudest extension of speech, and which, when there was anything of a ring about it, wavered round a middle B".[21] - Delius was unable to produce vocally the notes he obviously heard imaginatively. His musicianship was beyond question.

No child revealed a sense of "absolute pitch".*

Throughout the experiment, but especially during the first year, the most noticeable difference in the choral work of the two Groups was the rate of learning of the songs and hymns used.

In Group II in both schools this was slowed down less by the learning of the tune than by the reading of the words. When the investigation began 20% of the children stumbled over the title of the song "O can ye sew cushions?" and 50% of them found considerable difficulty in reading the words of verse I of "Peaceful Slumbering on the Ocean".†

* "Absolute Pitch" enables a person to name any note immediately it has been sounded without having heard a reference note or chord previously. Only a small proportion of musicians possess it, and experimentation is still being undertaken to discover whether it can be acquired as a result of training. Some musicians claim it as a valuable asset; others regard it as more nuisance than it is worth, especially in transposition. It is certainly not essential to musicianship although, as Seashore[66] points out, "... the possession of absolute pitch to any degree is a safe guarantee of a good sense of pitch and "ear-mindedness"."

† Peaceful slumbering on the ocean,
Seamen fear no danger nigh;
The winds and waves in gentle motion
Soothe them with their lullaby.

Because of this it was not possible to place a song in front of the children of Group II and expect them to read the words with reasonable fluency - nor even after they had first heard them read as a poem - when they had a good grasp of the melody. In order to accommodate this backwardness of reading, the melody had to be slowed down so enormously that all sense of its Rhythm and structure disappeared, and it proved necessary to learn the words by rote before any attempt at combining the words with the melody could be made. The printed words then acted in the same way as the musical notation - as a vague visual reminder of what had already been learnt in another manner. Even when the words had been memorised there was an indistinctness of consonants, and much practice in articulation was required.

Some songs, e.g. "The Well of St. Keyne" and "Robin Hood", were chosen because they used the same tune for two different sets of words. This saved some time for the retarded children as it gave them two songs at the expense of learning only one melody.

During the first term of the investigation the problem of the words caused Group II in both schools to take approximately two and a half times as long to learn one song as it did Group I, although the melody could be memorised nearly as quickly.

Such delay was discouraging, and songs with long lines and verses and protracted stories, all of which would be difficult to

memorise and likely to cause confusion in the children's minds, were discarded. In their place were substituted songs with a refrain, e.g. "The Mallow Fling", or a recurring phrase, e.g. "Lilliburlero". The chorus parts were sung by the whole class together and the verses by the investigator or by a small group who had been taught them before the lesson. Each section of the class was given its turn and enjoyed the responsibility, the real reason for the division of labour being known to none of the children. After a few repetitions the whole song, both verse and refrain, was known by all the children.

In Group II of the Boys' School the additional use of Shanties was an ideal and natural method of securing such a division - the adequate readers taking the part of the Shanty-man and the remainder of the class that of the sailors.

The association of the words which the children had learned by rote with the printed symbols which they could not read was valuable to them, as was the association of the melodies they were learning by rote with the musical notation which as yet they could not read fluently. In this way the constant use of melody editions proved beneficial to their ordinary reading as well as to their music reading. There is no valid educational reason for teaching the words and music of songs to retarded children entirely by rote without copies - even if the copies are not always used in the manner for which they were intended. It savours too much of

the attitude expressed in the quatrain:-

Ram it in, ram it in,
Children's heads are hollow;
Ram it in, ram it in,
Still there's more to follow.

There is also no valid reason for giving the children of Group II an overdose of a good thing! Complete discouragement was as apparent when a song melody of more than average length (e.g. Flora MacDonald's Lament) was placed in front of them as when they were faced with large numbers of verses. Short melodies - containing phrase repetition, sequence and an easily understood form - which can be grasped as complete entities in one period, are recommended as the basic diet for this Group. The sense of achievement secured then prepares the way for further advances.

It was the investigator's judgment that in the learning of the actual melodies the children of Group I of both Schools were able to memorise longer sections at one time than Group II, but when Group II - especially in the Girls' School - had once mastered a phrase they rarely made any mistake of interval or rhythm in their repeated singing of it.

Group I, who grasped the fundamentals of the structure immediately, memorised more superficially and were not prepared to give such intensive concentration to the work in hand.

Several cumulative songs (e.g. the Danish folk-song "The Little Tree") were introduced to encourage the development

of memory as well as to satisfy a popular demand. Although Group II always found these difficult to read in the first instance, probably because of the complicated manner in which economy demanded that they should be set out in print, they had no trouble in remembering the number and sequence of items or events listed when they were combined with the melody to which they had been set. Greater difficulty was experienced in reciting them. It was surprising to discover how well such songs were remembered after the various holidays.*

The speed with which songs in their entirety were learnt increased slowly until at the end of the investigation Group II had nearly as large a repertoire as Group I, and during the last term they learnt 90% of the songs of Group I to a worthy standard of performance. Their normal reading had not improved proportionately.

Throughout the course all songs which had been learnt by Group II were revised periodically. Few of them were ever forgotten.

* When singing was introduced into the Board's Schools at the end of the last century songs were often used to teach extra-musical factors from moral precepts to arithmetical tables. This is obviously not music's essential function, but it does seem possible that music may be able to aid both reading and memory training in a manner not yet fully exploited.

The potential tone quality of Group II was not inferior to that of Group I and at times showed a sensitivity rarely achieved by the more intelligent Group. But in both schools it was affected by a tendency to breathiness. This lack of breath control caused the intonation to be uncertain, flat and sharp singing appearing with such varying external conditions as fatigue and nervousness, and phrase building being much more difficult than when a well-controlled stream of air was available. It was in part the result of the physical condition of the children and was a social and medical rather than a musical problem.

The quantity of sound produced by the girls of Group II was smaller and vitality and colour were often lacking. The chief difficulty with the boys of this Group was to secure a robustness which did not develop into mere shouting. Their soft-singing was always a delight.

In the Girls' School part-singing was possible by the beginning of the second year, although little of it was done because of the unevenness of quality of the unison work. Simple rounds in 2 and 3 parts were introduced first. These caused considerable difficulty to both Groups - and to the investigator - for they were regarded as vocal competitions in which successful results were only achieved when no part could hear any other and cacophony reigned supreme. "Finger-in-ears" was the order of the day and proved to be a habit of long standing not easily eradicated. When, however, it had been eliminated, Group I managed to maintain their individual parts successfully.

Group II took exactly four times as long (and considerably more persuasion) to achieve this. When fingers were fixed as far away from ears as possible only the vocal part which began singing the round as Voice I was able to maintain its individuality and all other parts gradually attached themselves to it until a unison melody, with a crescendo not unworthy of Rossini was the result. After the second term of round singing the girls of this Group began to gain confidence and expressed a sense of triumph in their faces as they recognised their ability to remain independent and yet form an integral part of a perfect harmony. Group II could never be divided satisfactorily into more than two parts for round singing.

The same fear of independence and a corresponding slowness of learning applied to their singing of canons. Even at the end of the investigation a two-part canon with a piano accompaniment was too difficult to be learnt with any degree of enjoyment.

Descants proved less difficult with both Groups.

Because of the extra strength of their voices and their greater tenaciousness Group I held a descant more unfalteringly in the early stages of learning. But when Group II had managed to memorise descants (and the whole class insisted upon doing this), the girls selected to sing them did so with a pleasing tone quality and absolute correctness. The more independent the descant from the melody, the more easily was it learned by the members of this Group.

It was interesting to notice that Group II seemed to regard their descant and song melody as two entirely separate entities which happened to fit together. When a change of tempo or rhythmic alteration was made by the singers of the tune the descanters went on apparently oblivious of the fact, but singing their own part perfectly, with the result that the two melodies ended at different times after some rather strange harmonies "en route". This seemed not to worry them unduly. Group I's descanters noticed almost invariably such changes of tempi, adapted their own melody accordingly and stopped until all was right again.

Group I was able to do a limited amount of real 2-part singing for equal voices by the end of the investigation using their music-reading ability to expedite their learning: Group II none.

In the Boys' School very little part singing was attempted. Rounds and descants were possible with Group I from the second term of the investigation, but although Group II were able to learn a descant as a separate entity they were quite unable to sing it above the tune unless the investigator sang it with them or played it loudly on the piano. - Then there was a danger of the tune-singers losing themselves! - The results were so unmusical and the time taken so long that this activity was considered an unprofitable use of valuable and limited teaching periods.*

* Valuable part-singing is only possible with children when a certain degree of fluency in music-reading has been achieved.

Part singing was not done with Group I as their voices had begun to change by the time that they were ready to start and their interest had shifted temporarily from singing to listening. By the end of the experiment the voices of ten boys of Group I and seven boys of Group II were either changing or had already changed from their treble quality and pitch into potential adult tenor or bass voices.

This did not prevent them learning songs and hymns which were transposed to suit their voices and at the end of the investigation the boys were ready to take part in the singing of special three-part arrangements for soprano, alto and baritone. This work was going to be done during the remaining five months of their third year and throughout their fourth year.*

A large amount of unaccompanied singing was included in all the lessons. The piano was not greatly missed, although the girls of Group II seemed to gain confidence from its support, and the boys of both Groups enjoyed its lively accompaniments. When it was used the children were taught to count the introductory bars and interludes in the normal orchestral manner: 1 2 3 4, 2 2 3 4, 3 2 3 4, etc., and to follow them bar by bar in any copy which had them. Group II in both schools found a little difficulty in using this method at first, but it proved a valuable method of training their concentration and by the end of the course there was no hesitation in any of their entries after an introduction or interlude.

Song singing was quite the most popular of all the schools' musical activities with the retarded children.

* The performance of songs in three parts (S, A, B) by the retarded boys of the fourth year in this school is always a rewarding experience. At this stage the adolescent voice assumes an indefinable quality which is extremely moving.

Chapter XII.

Listening to Music.

Although the gramophone and radio are useful aids for bringing into the classroom the finest works of the great composers, they do not equal in value the recital given by a living artist on his own instrument or the performance of an orchestra in the school itself. The immediatecontact of the personality of the teacher or soloist with the children is of incalculable importance in kindling a vital flame of enthusiasm for the art.

As part of the training in listening which formed an important section of this investigation, instrumentalists - a pianist, a flautist, a violinist and an oboist - were invited into the classroom to play to the children and to demonstrate to them their instruments. The programmes were not ambitious and never lasted more than half-an-hour. In order to revive any flagging interest the melodies of two familiar songs were always included, and the children were asked to participate by humming or singing them.

It was impossible to tabulate satisfactorily the reaction of the subjects to these recitals. They could only be assessed qualitatively. Although all the children were encouraged to talk freely about each programme they were not asked detailed questions after them, nor expected to produce written accounts in every case. It was feared that these would have created

an artificiality of expression and have taken away much of the pure enjoyment of listening. Consequently only the impressions of one recital were available in a written form and the comments of the children on other programmes were compared with these written ones. They seemed to be a representative description of their general response to the music and their interest in the instruments, although, as one would expect, their opinions of the various artists as personalities varied enormously.

In the Girls' School the written comments were received after the violin recital.

Group I accepted the visit as a matter of course and showed little enthusiasm when it was announced. They found no difficulty in recognising the pitch of each of the instruments four strings and listened attentively to the first part of the programme during which some of the tunes they had already sung or heard in school (e.g. "Fairest Isle" and Handel's "Largo") were played to them. In every case the name of the composer was remembered and the tune was sung quietly by the girls as the violin played. The inclusion of 'ballet' music - "The Dance of the Blessed Spirits" from Gluck's opera, "Orpheus", stirred their imagination and appealed to them. There was no noticeable physical reaction to the rhythm of Mozart's Minuet in D Major or a Bourrée by Handel, although both were listened to with concentration.

The recital had lasted slightly over twenty minutes

when the class began to get a little restive and an under[illegible] of whispering became apparent. The recital ended with th[illegible] of a Scots' song, "O can ye sew cushions?", which the girls had already learnt, and then the singing of the same song with the violin adding a descant.

There was a spontaneous burst of applause after the performance, and an obvious sigh of dismay that the lesson had finished. Although in their comments all the girls said that "it was nice", "it was enjoyable" and "the violinist played well", no one mentioned anything about the actual construction of the violin or the quality of tone it produced, and there was no general demand for more recitals of this type.

The girls were happy to have spent the time enjoyably in this manner, but they received the pleasure like so many other good things with which they were provided in school - as a matter of course. Exactly the same sort of reaction was noticed after every visit of an instrumentalist.

Group II were bursting with excitement when they heard that they were going to hear a violinist - it was something quite new to them, and they looked forward to any surprise which may come.

Only one girl was at first able to recognise the highest and lowest strings; but after a second slow sounding of each of the four strings all the class managed to discriminate amongst them successfully.

The girls were encouraged to hum the melody of "Fairest Isle", (which they claimed as the composition of King Arthur!), with the violin, but they were so intent on watching the violinist and listening to her playing that their own singing was soon forgotten. They showed the same enthusiasm as Group I when the word "ballet" was mentioned, although to them it meant primarily "a lady who dances on her toes". Most of them attended dances regularly and were eager to hear the Bourrée by Handel. They evidently felt the strong pulse of this and began to tap it out quietly with their feet.

The girls listened intently and sighed as the lesson ended. There was no attempt at applause. A few girls showed signs of physical tiredness by yawning, and occasionally the concentration was broken by the turning of a head, but these movements were not sufficient to break the general atmosphere of apparent absorption. The recital lasted a little over twenty minutes.

Again the comments received gave little indication of the pupils' real feelings, or the impact the music had made upon them. These intangible qualities are difficult to assess and express even for adults, and to attempt to force them from children often has the effect of crushing a very beautiful but delicate experience.

To most of them the recital was "lovely"; all agreed that the music was as beautiful as any that they had heard before on the radio or in the cinema and without exception they asked for more music of this sort. Details of the instruments shape were

mentioned and one girl noticedhow various uses of the bow produced differen. sounds. Several of them expressed a desire to learn the viclin and this desire was made vocal on several later occasions. Unfortunately none of the parents concerned were in a position either to buy an instrument or to pay a private teacher for lessons. Now that a peripatetic teacher has been appointed to this school it may be possible for the situation to be remedied.

This was the first recital given to the girls. During the oboe recital - the last of the series - both Groups noticed many more details about the music, although they showed no great interest in the construction or mechanism of the instrument itself. During all four recitals Group II listened with quite as rapt an attention as Group I - and their facial expressions and absorption suggested that the influence of the music on them was even stronger than on Group I who continued to accept everything in a slightly superior and sophisticated manner.

The following impression of the boys' listening and powers of observation is based upon their comments received after the flute recital. The comments were much fuller and more frank than those of the girls had been.

Group I noticed the range of the instrument "...it plays high and low notes", and the quality of the tone ".....gay and sweet", ".....pleasant sound". They also watched how it was taken from the case - ".....it has a case to put it in", ".....it can be unscrewed into pieces", - how it worked technically, - ".....you

press silver buttons on its side", - and how it was played - ".....you have to blow over the hole and not into it", ".....when he pressed one key, a few moved at once". Its construction interested them - ",....long thin, black object built on the same principle as the tin whistle", ".....about 2'6" long and 1" in diameter", - and the performance of the player did not pass unnoticed, although it received rather uncritical adulation - ".....played very well". One boy reached great heights - ".....most beautiful thing I have ever heard". Many remembered that the flute belonged to the woodwind family of instruments and all could quote at least three of the items played. The only dissentient voice came from a boy who said ".....it can produce an awful screeching sound which makes the head ache", - but even he admitted that it had "good low notes".

The remarks of Group II were fewer and contained less real observation.

The range of the instrument was mentioned by only one boy - ".....the flute has got a very high pitched note"; another had looked carefully at its construction, ".....it has three parts to it", and the same boy had watched how it was played, ".....you blow over a hole at the top".

But all the boys had been affected by either the quality of the tone of the instrument or the mood of its music, ".....it makes very sweet music", ".....it is merry", ".....it was very beautiful". Only two of the boys remembered the titles

of anything that had been played. The performance was greatly praised - ".....he is very good at the flute", and the mannerisms of the performer were noticed by several boys - ".....the man danced when he was playing".* One boy mentioned the accompanist!

Several unsolicited remarks indicated the amount of enjoyment the boys had experienced during the performance:- "I stayed in at playtime to listen to more of it in my spare time.....". "I wish I had a flute of my own".

Group I approached the recital in a more critical and questioning manner than Group II. They were primarily interested in the flute as a piece of mechanism and seemed more concerned about its construction than the music it produced. Their listening was concentrated and any slight whispering which began within the Group was immediately stifled by the glares of the rest of the class. The recital lasted a full half-an-hour and boys still remained behind after it had officially finished.

Group II gave themselves up to the music itself with complete and passive abandon. While the flute was being played they remained in complete silence: immediately the sound ceased they began to settle down again. They tired more easily than

* The flautist had actually made a slight movement with his feet during the recital. He was not conscious of this mannerism, but after hearing the boys' remarks decided to get rid of it with all speed!

Group I and had reached saturation point in twenty minutes. At the end of the recital almost all the boys remained behind to examine the flute more closely.

Whereas the girls had tended to watch the hands of the pianist - if anything - the boys glued their eyes to the mechanical workings of the flute.

The flute recital was the second recital to be given in the Boys' School.

In addition to these recitals some listening music was included in every period during the investigation. For this purpose the piano was used as often as possible, since, as has already been suggested, the presence of the performer in the room brought an added interest to the children and helped to focus their attention.

The girls' enthusiasm for ballroom dancing and ballet led to a concentration on dance forms. Waltzes by Chopin and Brahms, together with short dance movements from the classical suites of Bach and Handel, were played to them. When selections from "Les Sylphides", "Swan Lake", "Casse-noisette" and "Coppelia" were later included, the stories of the ballets were told to the children and pictures of the various sets and dancers were exhibited in the school.

The cantabile legato movements were enjoyed by Group I in the rather sophisticated manner already noticed. The waltzes of Chopin which they associated with the ballets were

liked by them, but other waltzes, such as those by Brahms, were dismissed as bearing no resemblance to the ones to which they danced every evening. Group II preferred either strongly rhythmic music or melodies heavily overlayed with sentiment. They reacted immediately to the quick waltzes and were always stirred to physical movement by them, but their favourite listening music was Chopin's "Prelude" in A major, a short piece of sixteen bars in 3/4 time with a crisp rhythm, a clear-cut structure and an easy melody to memorise. This they asked for continually and often chose it as a tune to sing instead of a 'request-song' at the end of a singing period.

In the Boys' School the emphasis on listening music was rather different. Waltzes by Chopin were played, but only the quick ones made any appeal to either Group; the slower sentimental type caused boredom, and only the first phrases were ever listened to with any attention. Group I preferred the clear structure and precision of the classical period. Handel and Purcell were great favourites. The movements by these composers were all fairly short and virile with a strong melody which could soon be learned and whistled. A few boys enjoyed pieces of a lyrical nature by such composers as Grieg, but they were a minority, and it was difficult to keep the remainder of the class really interested during the playing of this type

of music.* Group II were only able to listen for any length of time to music of a strongly rhythmic character. They appreciated marches and gay pieces like Grainger's "Country Gardens" best. Slow sentimental tunes which had appealed to the girls of this Group meant nothing to them.

The gramophone was used in conjunction with the actual instruments already referred to, and with pictorial charts to introduce the children to the orchestra. "Tubby the Tuba" and "Peter and the Wolf" were listened to by all the children in both schools, although Group II (both boys and girls) followed the story of "Peter" much less easily than that of "Tubby", who quickly became a great favourite. "Peter and the Wolf" proved too long and seemed to them too disjointed . There were so many main themes that they found them difficult to remember in association with the appropriate characters. Once their concentration on the story had been broken it was difficult to restore it without beginning the whole record again. Although this difficulty was experienced in associating melodic fragments with characters there was no difficulty in recognising the actual instruments. In the case of "Tubby the Tuba" there was only one

* It is at such times as these that a peripatetic teacher realises his limitations and how much more could have been done with these boys in a small voluntary listening group during his spare time. The difficulty, too, of maintaining discipline from behind an upright piano when only half the class are interested in what is being played brings home the value of mini-pianos and small grand pianos in a school.

main instrument - and a very distinctive one - the tuba, to follow as the principal character.

Apart from these stories, no Group was particularly attracted to 'programme' music (except when it was related to ballet) and the retarded children in both schools preferred to devise stories of their own creation to fit the music than to accept those which were in the composer's mind when the music was first written.

Despite the fact that more variety of timbre was made possible by the use of the gramophone, far less interest was shown in records than in piano music, and the length of time given to a listening period with the gramophone was correspondingly smaller.

The amount of listening time possible with the gramophone and piano differed between Groups, although not greatly between sexes. As was customary the biggest extremes were found in the Boys' School.

At the beginning of the experiment three minutes undisturbed listening to the piano was the maximum for Group I, and just over a minute all that could be expected from Group II. At the end of the investigation Group I were able to listen for an unbroken period of seven minutes, Group II for about five.*

* This, of course, was not the maximum amount of time the piano could be played during one period: immediately a break had been made the children were prepared to listen again.

When the gramophone was being used, one side of a 10 inch record was the maximum amount to which Group II gave complete attention, fidgeting beginning soon after the change of sides. Group I were usually able to hear both sides through before they tired. But this was the maximum for the listening period.

When the performer was himself present in the classroom and the listening was broken by spoken interludes and participation on the part of the listeners, the time spent could be extended to as much as thirty-five minutes for Group I and twenty minutes for Group II. This was attempted only when visiting artists were invited to the school, as it was the general policy not to limit any single lesson to one activity.

It proved difficult to introduce new music to Group II. They were frightened by change, and innovation had to be made cautiously over a long period. When once a piece of music was known and liked several repetitions of it were demanded. Group I were generally content with one playing (the girls of Group I listened to the last movement of Haydn's "Trumpet Concerto" once and were satisfied. Group II demanded four repetitions and seemed to enjoy it better each time).

It was easier to introduce unfamiliar music to Group II when they were following one of its ryhthmic groups or melodies on the blackboard or in their copy books (e.g. the rhythmic motive  from the "Pavane" of Peter Warlock's

"Capriol" Suite*).

Group I, especially in the Boys' School, showed some interest in contemporary music: Group II none, unless it happened to be in the form of a popular 'hit' played on the piano by one of their own members. This they naturally revelled in, however bad the performance.

The boys of Group I were as interested to hear about the technical details of the instruments they heard on gramophone records as they had been to observe the construction of the actual instruments which had been brought into the classroom. By the end of the investigation a similar interest in the construction of the instruments, although not their technicalities, had been stimulated in the boys of Group II, and their sense of discrimination amongst instruments had developed surprisingly. Although the retarded girls showed less interest in orchestral instruments than the boys - or the girls of Group I - their powers of discrimination and appreciation of form and structure had also increased by the end of the investigation.

Both the girls and boys of Group II came armed with numerous requests and often brought their own records with them. Some children even produced sheet copies, which their parents had bought, of music familiar to them through the radio programmes. There was some difficulty in fitting these into the scheme of things, but the enthusiasm evinced was so great that every attempt was made to use them in some way. The children of Group I were far less anxious to make requests.

* The use of percussion instruments as a possible aid to listening is discussed in Appendix D.

Chapter XIII.

Music Reading.

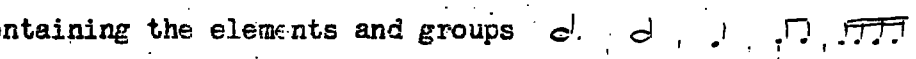
As has been stated, melody editions were used in the teaching of songs whenever possible, so that the children would, at least, be aware of the contour of the tunes they were singing. Almost all of the music reading was taught from the songs, hymns and orchestral fragments already being used in the school's music scheme. No "sight-readers" were introduced but occasional phrases were composed to answer an immediate need, illustrate a particular teaching point and supply a suitable test.

Two problems nearly always face music teachers who are beginning a systematic course of music-reading in a secondary school, (i) the attitude of distaste and sometimes real animosity for the activity which accompanies the children from their Primary Schools, (ii) the dependence of many of the class on a few reliable 'leaders' whose music-reading has been learnt at the key-board or another instrument. This leaning on 'leaders' is not entirely a bad thing and it can be used to good advantage, but the fact remains that under such conditions, and without time for concentrated individual work, the music teacher finds it difficult to discover how many children are actually reading the music themselves and how many are merely following a fraction of a second behind.

The children of all four Groups came to their Secondary

Schools with a slight prejudice against "sight-reading" which took a little time to break down. Group II in both schools had far fewer 'leaders' to rely upon and so progress as a class was considerably slower than that of Group I.

Both girls and boys of Group II were generally able with a little practice to read rhythms involving only the elements  , but they took two years to read accurately the more complicated group  , and even then, as the individual tests at the end of the course show, the achievement was by no means a general one.

As a class Group I in both schools were able to read phrases containing the elements and groups  and  by the end of the first year, but individuals within the class continued to find this impossible even at the end of the investigation.

The singing of intervals proved more difficult for all Groups. As a class the members of Group II were never able to achieve more than step-wise reading and the leaps within the common chord (d: m: s: d) from sol-fa notation. It was difficult to make much progress in the use of staff notation with this Group. Group I were able to read some other leaps (e.g. d: f: d: l) with comparative ease from sol-fa, and further progress was made in the use of staff notation.

Group II were rarely able to read at 'first'-sight, but after a few attempts when the sound of the intervals had become fixed in their minds they were able to repeat the phrase with no mistake in the same way that they were able to sing with complete accuracy song melodies they had learnt by rote.

Group II never really became interested in the activity as did Group I who grew quite excited when they recognised the fragments of tune they were reading. Group II preferred to "pick-up" their music by rote and looked upon music-reading from copies as an unnecessary bore. An entirely different attitude was apparent when they were reading with the aid of a recorder in the Girls' School and the piano keyboard in the Boys'. It would seem that the use of an instrument, however simple, is a valuable incentive to the music-reading of the children of this Group, and as an aid in the transference of sol-fa to staff notation.

Chapter XIV.

Other Class Activities.

(a) Recorder Playing. (Girls' School only).

The recorder is one of the simplest instruments for children to learn. It is a real musical instrument with a long history and tradition. It has no keys or complicated mechanism and all the notes of the two octaves available are produced by the use of various combinations of fingerings. The player sees a printed symbol and uses a fixed fingering to produce it. The activity, although comparatively simple, demands concentration and muscular co-ordination. Many pupils who play a recorder are able, at a later stage, to learn an orchestral wood-wind instrument with comparative ease.

No recorders were available in the Boys' School, and so recorder playing was introduced to the Girls' School only.

From the limited amount of work it was possible to undertake during the lessons, it was apparent that there is no real reason why the retarded child should not be given the opportunity to play this instrument. The delight and enthusiasm with which its advent into the classroom was always met was a real joy, and the intense absorption of the children in the activity showed how much it meant to them. They inevitably progressed at different speeds, but with their usual good-natured tolerance they co-operated happily to help each other.

Their progress was slow and only half of the work possible for

the more intelligent group could be completed by them. Their music reading was halting and their movements were rather clumsy; often quick co-ordination between reading and fingering was lacking. The breathiness, noticed already in retarded children's singing, was again apparent and made the intonation unsure.

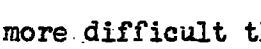
But the difficulty encountered was never too great to cause frustration and the sense of achievement and regained confidence which Group II showed when even the smallest melodic fragment could be played, was most gratifying and entirely worth the considerable trouble often involved.

(b) The Piano Class. (Boys' School only).

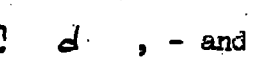
It is perhaps rather pretentious to call the work undertaken at the keyboard in the Boys' School a "Piano Class" in the usual sense of those terms, for the aim behind it was not primarily to teach all the boys how to play the piano as executants, but to use the keyboard as a medium for their general musical education and as an aid to their understanding of pitch and Rhythm in music reading. As the work entailed was essentially practical and used tangible apparatus, it was hoped that it would appeal particularly to Group II.

Each boy had his own model keyboard with a range of two octaves and with notes of the same size as those on a "speaking" piano. The keyboards were made of stiff cardboard and on each note was written its alphabetical letter name. It was imperative that the activity of "playing the piano" should not degenerate into a mere mechanical fingering exercise remote from music, and so the notes which were being fingered by the boys on their model keyboards were always sounded simultaneously by some one playing the notes of the "live" keyboard, or by voices. Five boys in Group I and three boys in Group II had already learnt enough from a private piano teacher to be able to stand at the instrument and help the other boys who, in their turns, were called out to play the melodies.

Only the right hand and the treble clef were required, and

only tunes which were chiefly stepwise or contained a limited number of small leaps were learnt. These tunes contained no symbols more difficult than  and the rests  . During the teaching the French rhythm names and tonic sol-fa syllables were used in conjunction with the symbols of staff notation.

The enthusiasm for this activity remained unflagging throughout the experiment and the interest and perseverance of Group II appeared to the investigator to be as great as that of Group I. The biggest difficulty was extra-musical - how to restrain a seething crowd of enthusiasts from mobbing the "live" piano and trying out their ability at every available moment!

At the end of the investigation each boy was expected to be able to play the French folk song, "Frère Jacques". This melody has no complicated rhythms - only the three primary factors:  - and is largely stepwise, the only intervals introduced being those of the common chord - m:d, d:m, s:m, d:s, s,:d.

Although one particular system of fingering enabled this playing to be done most easily, any alternative fingering was allowed, provided the Rhythm was undisturbed. No account was made of the quality of the tone produced at this stage. Beautiful tone is a sine-qua-non in the musical playing of any melody and is awarded marks in a practical examination under the heading "Interpretation", but it was a quality which could hardly be expected from boys who had received instruction in class for such a short period.

It proved impossible to give exact marks for this test.

24 (75%) of the boys in Group I were able to play the melody with less than two mistakes in pitch and no subject made more than four mistakes. There was greater hesitation and fumbling in the playing of the rhythm groups but this seemed due to inadequate technical facility rather than lack of reading ability. Only 2 boys were able to play the melody without a flaw in the Rhythm and both of those had private piano teachers.

Group II's performance was considerably poorer. 15 (50%) of the boys played the melody with less than two pitch mistakes, but there was a great variety of standard in the performance of the remaining 50%. None of the boys of this Group played the melody with its correct Rhythm. This was not altogether the result of physical inability (for a correct version was usually produced, after much struggling, by most of the Group), but was due to the subjects' slowness in reading the rhythm symbols and their consequent delay in translating them into terms of tone production. Such hesitancy inevitably caused a barrier to the flow of the music.

When reading music Group II appeared to think of each note as an isolated unit rather than as an integral part of a grouping, phrase or sentence. They were able to produce each separate note correctly, but in so doing disturbed the shape of the larger unit.*

* Research is required into the relation of the principle of "sentence-method" in ordinary reading to phrase and rhythm-group reading in music.

It is the investigator's belief that this situation might be remedied if an interest in the actual playing could be maintained during the progressive introduction of the rhythm groups. Some improvement in this direction had been made by the end of the investigation.

The boys were more aware of both their pitch and rhythm mistakes when they played a melody which was already familiar to them as a song or piece of listening music, and they always succeeded better in performance when the fragments they were about to read had first been played to them.

This did not happen in the present test, but it is a method which could profitably be adopted in instrumental work with retarded children. Their capacity for imitation is one of their greatest assets.

(c) Music and Movement. (Girls' School only).

When listening to music children are naturally stimulated to bodily movement and use their bodies as a medium for the expression of the mood and Rhythm which they are experiencing. This expression varies with the type of music played, (e.g. sad, joyful, slow, quick, legato, staccato), and the sort of movement used depends upon the music and the mood it stimulates. A large variety of movements of the body are available, although it is usually found that only a few basic movements involving the feet and arms are at first adopted by the majority of the children, and that all other parts of the body tend to be neglected. Many physical factors are involved in the bodily expression of even the most elementary moods, and these may form a barrier between subjective experience and expression. But when movement is allied to music it is generally true to say that the better the quality of the movement produced the more valuable and concentrated will have been the listening, and the richer the musical experience.

The individual rhythm of each of us is expressive of our temperament and background and is conditioned by the physical structure of our bodies. There is a great difference between the natural Rhythm of the vital, confident child and that of the nervous, apathetic child. Although their natural rhythm may still remain predominant during movement to music it can be controlled and directed to a considerable degree by the music itself.

Music and Movement as a useful means of encouraging careful listening, a valuable physical activity and a healthy outlet for the emotions is an integral part of musical education - always provided that the music is worthy in itself. Many pieces of music written for Movement Classes may stimulate physical jerks of a sort, but their permanent value as real music is negligible. The music used during this experiment was all taken from the songs the children sang or the works of recognised composers.

Several teachers have written about the value of various types of music and movement to their own retarded children.

Robert Snell, a practising musician, suggests that "the association of movement with music may offer a possible avenue of development for retarded children. Physical activity in retarded children is usually superior to mental activity and to express musical ideas through movement is a satisfying experience".[69]

And Duncan stresses the ability of his pupils at a specialised form of movement to music - Country Dancing - "For some years Country Dancing has been for the girls of Larkhills one of their most joyous activities. All the older girls know many dances, most of them dance well. The dancing of the select team is very beautiful indeed. The poise, the movements, the vivacious facial expressions and the atmosphere of happiness are remarkable. The speed of learning new dances is still more remarkable".[20]

There was no need to "introduce" Music and Movement into the Girls' School concerned in this investigation. An interest in ballet had been shown from the first. Some girls knew the film, "The Red Shoes", others had seen pictures of ballet dancers, if only in popular weekly magazines, and a girl in Group I who was having regular lessons in ballet dancing was always prepared to demonstrate her progress to the rest of the class. She was the only girl who, at this time, had ever seen a "live" ballet, but her opinions about it were rather neutral..."It was all right...."

In the school itself, many of the exercises in the P.E. lessons had music as an accompaniment. Neither this nor ballet is what is meant here by the description "Music and Movement", but both of them had prepared the ground for the experimentation which was about to be attempted.

It was natural then, that when a gramophone record was played in the Assembly Hall for listening purposes and there was plenty of space available, some of the girls after listening attentively for a few moments should wish to move some part of the body to it*, and when permitted, should be prepared to leave their seats and move freely about the Hall.

This "free" movement continued at intervals over two terms with only a few suggestions from the investigator, but with a careful supervision to ensure that no harmful physical movement was being indulged in.

* Many adults instinctively nod heads and tap feet in exactly the same way in our Concert Halls.

After the first few periods it was apparent that all girls in both Groups were feeling the underlying pulse of the music. They walked and marched in time without any difficulty, and other basic movements, running, skipping and galloping were all included as fundamental elements in the movements with which they were experimenting. Two extremes became increasingly clear; (1) an attempted imitation of the formal stylised steps of ballet and (2) an aimless meandering in a herd-like formation around the room - but still governed by the pulse of the music. These were noticed in both Groups, although the meanderings of Group I were more forceful, and the attempted ballet steps more frequent than those of Group II whose reactions were of a vague imaginative nature.

The time had obviously come for the ideas and energies of the girls to be guided into channels of greater educational value. For this purpose the aid of a specialist in movement was called upon.

The new Music and Movement work introduced at this stage into the experiment was not primarily an aid to the teaching of musical notation, form or any other musical element, nor a musical accompaniment to a physical exercise, but a medium for the sensitive expression of the musical moods and Rhythm of the work which the girls were hearing on the piano and gramophone and the emotions which they were experiencing within themselves.

Originally, when the girls had left their seats in the Hall on the impulse to move they were wearing their normal school dress and shoes. In the future, when a considerable proportion of the lesson was going to be devoted to movement they came prepared in light gym clothes and pumps to allow the maximum freedom for bodily movement.

The idea of serious "Music and Movement" work was something quite new to them and they spent some time in making up their minds about it. For a long while Group I remained self-conscious and sophisticated in attitude: Group II quickly gave themselves whole-heartedly to the project and were prepared to co-operate to the utmost limit of their ability. From both Groups the immediate reactions were sluggish and lacking in imaginative quality and even the imaginative movement already noticed in Group II when they moved as a result of their own desires seemed to disappear when they were asked to participate in this activity. There was a lack of movement vocabulary which frustrated the best attempts of many of the children to express in an external physical manner what they were feeling quite strongly internally.

At first, three pieces of music with clear contrasts of mood and Rhythm were played on the piano, the first, a quick dance containing a large amount of staccato playing, the second a waltz, and the third a slow, elegaic melody.

In each of these only the pulse was stressed by Group I.

Other important features like the climax of the melody and the sense of dynamics were apparently unnoticed. No imagination was shown in the use of the various parts of the body, the movement being limited to stereotyped actions of the feet and the hands, whilst the waists, hips, thighs and heads remained stiff. There was a recurring tendency for the circle of movers to cling to the edge of the room, all charging in the same direction and imitating each other closely as they began to develop a rhythmic surge which became gradually independent of the music and enjoyed its own separate existence. Self-consciousness caused many girls to bump into each other and there was often interference with each other's movements. Although the movement may have been stimulated initially by the music, the pianist soon assumed the role of "movement" accompanist.

The waltz was obviously the most popular of the three pieces, the sophisticated element in the adolescent girls being attracted by it, because of the associations it evoked. During the playing of it some of the Group preferred to move in pairs, using steps to which they were accustomed in the ballroom and humming the tune in a characteristically subdued manner.

Orchestral music on records, some of which had been composed by a reputable composer specially for movement, produced the same unimaginative results. The girls were easily excited by their own efforts and this excitability produced a number of giggles and

ready laughter. They were quite satisfied with their superficialities of expression and were not prepared to give themselves wholeheartedly to the work in hand.

Group II girls were far less sophisticated in their reactions to the same three pieces of music and immediately surrendered themselves to the music. Their vocabulary of movement was equally limited, being generally confined to the hands and feet, but within these limitations they showed more imagination, and lilting, stamping and clapping movements were added to the normal ones of running, walking, skipping and galloping. All of them emphasised the pulse, and a strong rhythmic expression was a characteristic feature of the work, even when no musical accompaniment was provided. This was also revealed in the able manner in which rhythmic patterns were improvised by various girls as a stimulus for the rest of the class.

Although they also liked the waltz, the quick dance containing the staccato playing satisfied their sense of Rhythm.

There was less interference with each other's work by members of this Group and their normal desire seemed to be for co-operation. Working in two's encouraged them to behave unselfconsciously, and the active, eager expression on many of their faces compensated for frequent halting movements.

After both Groups had experimented freely with movement for a considerable time and the novelty of the "Music and Movement" idea

was beginning to wear off, "Morning", a movement from Grieg's "Peer Gynt" Suite, was introduced to them, played first on the piano and then by an orchestra on a gramophone record.

When its playing on the piano had ended Group I burst into applause as an appreciation of its technical performance. They had watched the pianist's hands and were more interested in these than in the music itself. They listened quietly and with apparent concentration, but no ideas for its interpretation were forthcoming. No child had heard it before, nor knew its title, (although one thought it might be the "Water Music"). Although ideas about a possible interpretation of the music were encouraged from the children as a check upon their listening they were not demanded, since there is no valid reason why a piece of music should be given any but a musical interpretation.

When ideas did begin to flow, and movement was again attempted, a gradual improvement in both the attitude and the work of Group I became noticeable. Fewer girls wished to remain passively static in a corner of the room, and the whole Group worked with greater concentration and imagination. The difference in style, texture and pitch between the two main themes was recognised and expressed comparatively rapidly. The arms and feet remained the chief media of expression, but after a few suggestions other parts of the body began to take a share of the work, and the whole personality of the children became enlivened and vitalised as new means of interpretation were discovered.

During the playing of the same movement there was excellent concentration throughout from Group II's girls, many of whom preferred to lie quietly in relaxed positions to listen. After it had finished there was no attempt at applause and the Group remained in complete silence, broken only by a sigh and a distant voice, "It's nice.....!".

When asked if any ideas had come to them during the playing of the music the children produced none. This did not necessarily imply a lack of either attention or interest: although one tends to find that children do conjure up pictures or stories when they are listening. (This may be the result of the training in "appreciation" they have received).

After a second playing through, a girl produced an idea for a movement theme on "two lovers and a quarrel". This was typical of her age and background, but it did at least confirm that she had heard the two basic themes, that she appreciated the climaxes and changes, and that she had contributed her imagination to her listening. Group II used well the space available in the Hall. Their vocabulary of movement did not improve quickly and soon began to lag behind that of Group I, but the movement itself was equally sensitive, indeed, in certain cases far more sensitive.

At this stage in the experiment another instrument, the flute, was introduced as a new "timbre" and as an aid to pitch training.

The reaction of both Groups to pitch changes, timbre and dynamics was now immediate, and was expressed clearly in their movements. Both Groups were also noticing with greater facility other features of the musical structure at this stage - the sixth term of the investigation.

A well-known melody, the "Skye Boat Song" was next introduced. It was played on both the piano and the flute, and was sung by the girls before they moved to it. As the words and historical background of the song were familiar to all, a dramatic element entered more inextricably here than in any of the work attempted before, and the free movement tended to be moulded into a more definite form. This was unimportant if it was the direct result of the music's inspiration and not a self-contained entity divorced from the music and using it for its own ends.

In moving to this song, both the individual and group work of Group I was good. Their movement vocabulary had increased and improved in quality during the experiment, and the floor space at several levels was being used to better purpose. There was less self-consciousness than at the beginning and the movement had been freed, although it remained rather unimaginative and insensitive. With few exceptions, the girls were still not prepared to surrender themselves completely to the music or accept its compelling influence.

Group II showed great enthusiasm when working with the "Skye Boat Song", and excelled themselves in their miming. Their vocabulary of movement and consequently their means of expression had developed only slowly during the whole experiment and they were limited in their ability to interpret what their faces and spoken ideas suggested that they were experiencing. During each lesson their work improved beyond recognition, but by the following week much had been forgotten and a fresh start became necessary. A short daily period of "Music and Movement" would seem necessary if this activity is to be of the fullest benefit to this Group of girls.

Constant encouragement and unobtrusive guidance were required, although the girls did much willing thinking themselves and gave of their best. Their movement expression was less varied than that of Group I, but it was at no time superficial, and in the best moments it produced a quality of greater sensitivity than any seen from the other Group. During passages of slow music a surprisingly dignified carriage characterised the movement, but rapid pieces required more co-ordination of mind and body, and of the various parts of the body, than the girls possessed, and they quickly became breathless. Their powers of dramatic invention developed little throughout the experiment. But from the moment the lesson began they were

as completely absorbed in the work as they had been in their singing and listening periods, and they succeeded in getting right inside the music. The unsolicited comment of one of the girls is interesting: ".....it is so lovely that I have not been off for music since we got "A" and "B" coming to learn to do moving....."*.

At the end of the Course the girls were asked a number of questions about the work they had been doing. The questions, with their replies, are listed below:-

	Group I.	Group II
1. Did you enjoy the Music and Movement sessions?	100% -(32 girls) - Yes	96.6% - (29 girls) - Yes 3.3% - (1 girl) - No.
2. Which did you enjoy more:		
(i) the music?	50% - (16 girls)	13.3% - (4 girls)
(ii) the movement to the music?	50% - (16 girls)	86.6% - (26 girls).
3. Which section did you enjoy best:		
(i) Moving freely to various pieces of music?	25% - (8 girls)	16.6% - (5 girls)
(ii) Moving to the "Skye Boat Song"?	75% - (24 girls)	73.3% - (22 girls)
(iii) Moving to "Morning" by Grieg?	0%	10.0% - (3 girls).

* (If Music and Movement does nothing more than encourage the retarded child to attend school on more days in the week than would otherwise be the case, its inclusion in the curriculum is worthy of serious consideration!)

	Group I.	Group II.
4. When the music is played do you usually:		
(i) see a picture?	81.2 - (26 girls)	80.0% - (24 girls)
(ii) think of a story?	15.6% - (5 girls)	10.0% - (3 girls)
(III) just listen to the music without either seeing a picture or thinking of a story?	3.1% - (1 girl)	10.0% - (3 girls).
5. Which would you rather do:		
(i) listen to the music whilst you are sitting still?	50.0% - (16 girls)	30% - (9 girls)
(ii) try to express the music in movement?	50% - (16 girls)	70% - (21 girls).

The most interesting replies are those to Questions 2 and 5. These suggest that movement to music satisfied a real need in a large percentage of the girls of Group II. Their statements were substantiated by observation noted during the experiment and by remarks made by them to the investigator. Another interesting detail emerging from the replies is that both Groups preferred moving when the movements were fairly clearly directed by the story of the song and when they involved quite a large amount of mime. It was a fact too, that on the days when the girls of this Group knew that they were going to have this lesson their class attendance was higher than on any other day of the week.

(d) Music Writing.

During the investigation the children of all Groups wrote music into their manuscript books, sometimes it was copied from the blackboard or from their song books, at other times it was dictated to them as a melody played on the piano or sung by the voice, or as a rhythmic pattern clapped by the investigator.

Group I in both schools - but particularly in the Boys' School - appeared to derive enormous satisfaction from the sheer act of copying down musical notation, and always did it with great care and a pride in its appearance. They found difficulty in taking down music from dictation, but this difficulty was lessening at the conclusion of the investigation and there is little doubt that at the end of the school course they would have managed to write simple melodies with comparative ease. The interest of the girls in dictation was not great and, except in the case of a few gifted pupils, the rate of progress would inevitably have been slower.

The manuscript writing of Group II was, with very few exceptions, less neat and readable than that of Group I, and took much longer to do. The notes were large; they sprawled over the staff, and the tails were rarely placed at the correct side of the notes. The first few symbols were written firmly, but after that all control appeared to leave the writers' hands

and the result was a scrawl. The apparent inability of a large number of both boys and girls to copy the notes correctly into the appropriate lines and spaces made it clear that much of the music being written down was not heard mentally, and the work was consequently valueless.

The music written as a result of dictation fared even worse. The simplest rhythmic groupings were noted reasonably correctly by a proportion of the Group, but the pitch notation rarely showed more than the general direction of the melody. Yet the children had heard the melody, as they were able to sing it back quite correctly.

Music writing failed to capture the interest of this Group and was not enjoyed by them. It was unessential for their general musical education and it was decided to pay far less attention to it in the timetable than to practical music-making.

(e) Melody Making.

It is popularly believed that musical composition depends purely upon "inspiration", the result of a sudden spark from above. Even if this were so, available evidence suggests that a large number of children have received this spark, and that many of them are capable of constructing short melodies for themselves. The number and quality of such elementary compositions received from school children by the late Sir Walford Davies when he was broadcasting to schools surprised many professional musicians throughout the country.

The writing of a successful tune, however simple, implies musical imagination, a mental conception of the pitch and rhythmic groupings of the notes to be used, concentrated thought, some feeling for structure and the ability to transfer into a visual notation all these elements.

The biggest problem is usually not the creation of a melody, but its notation, and more children are able to sing a melody they have made than are able to write it down, simply because their powers of writing lag behind those of invention.

Our aim in school in encouraging melody-making is not primarily to produce a new generation of composers - although in an age of listeners that would not be amiss - but to awaken and quicken the musical perception of our children through their natural and healthy desires to create something for themselves. Such musical creation can be a satisfying form of self-expression, a

stimulation to the imagination and a means of discovering untapped sources of individuality, as well as of clarifying musical thought.

Melody-making was included in the course of Groups I & II in both schools. Sometimes the children were asked to write a melody over a time pattern, sometimes to provide an "answering" phrase to one given by the teacher, and occasionally to set a simple verse of poetry to music. If they wished, the whole of their melody might be original.

The greatest enthusiasm for this activity was shown by the boys of Group I who spent considerable hours at home writing melodies. At first these were provided with high-sounding titles revealing the type of composition with which the boys were obviously most familiar, but these gradually disappeared and at the end of the course they were bringing compositions to school which showed imagination, contained desirable elements of structure, and were singable. Some preferred to limit themselves to short melodies based on a few notes which they could play on the piano to the standard they had already achieved in their own performance. These were given an attentive hearing by the rest of the class, and inspired an enthusiasm which was unquenchable and which drove the boys to send their contributions through the post rather than wait for the weekly lesson.

The girls of Group I were far less responsive.* In class

* There have always been fewer lady composers of real worth!

they were able to create and sing back to the teacher short melodic fragments in answer to those provided, but they found no real pleasure in writing them down, and never produced any original creations unless they were being supervised. - Even then their melodies lacked individual character and reminded one forcibly of well-known phrases.

Both girls and boys of Group II were able to make up little phrases if they were given a time pattern or a few melodic bars as a lead, and some of these were delightfully imaginative and original; but the writing of them in staff notation was almost always beyond their powers. The effort of concentration required was so great that the work became a real hardship and the joy of creation was lost in the drudgery involved. For this reason only spontaneous oral work was attempted in class.

If one is content with the production of melodic phrases which can be sung once and then lost for ever, melody-making is an activity which can be attempted with retarded children. Otherwise the teacher must be prepared to take down each of the individual's melodies himself, and in so doing will find that the members of the class not immediately concerned become restive. To cause untold frustration in the children by giving them a task which they are quite unable mentally or physically to perform will completely vitiate all the satisfaction which may have been experienced during the act of creation.

(f) Scrap Books.

During the first term jotters were given to the girls of both Groups to be kept as their personal scrap books. In these they were free to stick the pictures of any artistes, composers, orchestral instruments or other musical subjects they wished. There was no regular supervision of the books, but the girls were encouraged to bring them to school monthly. It was hoped that the collections would give a realistic impression of their interests and their background of listening. They did! - revealing that the terms "musical subjects" could bear an elasticity of interpretation hardly suspected before.

Glamorous autographed photographs of favourite film stars occupied the major portion of the books, followed by variety artistes of questionable quality. Instruments were slightly less chameleon-like, but even they were usually in the hands of people of no musical relevance.

The scrap books of the two Groups did not differ significantly at all in either type or quality, except that the girls of Group I had been more assiduous in their labours. The results of this unsupervised activity confirmed the statements of the girls about their listening in the original Questionnaires, for the popular names mentioned there re-occurred frequently in the Scrap Books.

After this initial rude awakening, supervision continued to remain a minimum, but the investigator made several tentative

suggestions which he hoped would guide the girls' ideas along more fruitful lines. During one term, for example, both groups were sub-divided into smaller sections, each of which made itself responsible for the collection of pictures relating to the life and work of Handel and to contemporary and modern performances of his compositions. This opened a wide field of exploration, and pamphlets and books left with the Headmistress were soon consulted and chopped into the necessary small fragments. During this search for information Handel's songs were sung by the whole class, his orchestral music was played on the gramophone, and melodies from some of his major works were read from the board in tonic sol-fa and staff notation.

At the end of the investigation there was little difference in the standard of the work of the two Groups. The pictures of Group I were certainly stuck into their books more neatly and the captions provided were more legible, but the quality of the material itself of both Groups was equally good, and the names of worthwhile artistes began to appear with encouraging regularity in both sets. Although the books of Group II contained fewer pictures and less reading matter than those of Group I, more of the Group II girls produced their books on request. Several of the members of Group I continually forgot them or had neglected them so long that they were of no real worth when they finally appeared.

As this was a voluntary activity undertaken in the children's own time, no undue pressure was exercised, and the result was as one would have wished - a sorting out of the really interested from the apathetic. In this the girls of Group II showed up well.

(g) The Preparation of Class Concerts.

From time to time each of the four Groups was asked to prepare small concerts to give first within its own Group and then, if good enough, to children of other forms in the same school.

In the Girls' School this activity roused no great enthusiasm, and tapped no springs of unsuspected initiative. Group I pushed to the fore a few "star" performers and were prepared to let them bear the main burden of preparation and accept the resulting applause, while the rest of the girls remained content to form small groups and sing a few of the more hackneyed school songs.

Group II invariably commenced the project with spirit and interest, but both had evaporated before the concert was due to be given and, as there were so few leaders to accept responsibility, the proposed performance rarely became a reality. The only exception was when small items were prepared for the Headmistress whose approbation meant a great deal to the girls. In the preparation - under guidance - of a short Ballad Opera based on North Country Folk Songs, Group II revealed a much richer imaginative creativeness than Group I in their suggestions for a plot, even though these were of a somewhat lurid nature, and Bobby Shafto had been safely despatched during the first three minutes of the production.

In the Boys' School there was never any difficulty in securing volunteers to perform, either vocally or instrumentally; indeed in Group II the question was always one of fair elimination and of discussion without undue discouragement. Although members of Group II were invariably ready to perform to their own fellows they were less willing to appear before any other class or a member of staff. In any concerted items they found it difficult to know where to begin unless an experienced person was at hand, although some of their ideas were surprisingly original; and as in the Girls' School, the tendency for enthusiasm and interest to evaporate rapidly was always present. Group I showed considerable initiative and imagination in any performance undertaken and the only supervision required was an occasional curbing of undue boisterousness.

It is obvious that general intelligence as well as musical ability must be considered when organisation of this nature is involved, but it seemed wise to provide Group II with opportunities for such experience whatever the apparent results to their present audiences, as such performances may give them much satisfaction when they leave school and enable them - where adequate leadership is available - to make a valuable contribution to the social life of their community.

Chapter XV

The Musical Background of the Children (ii).

Every attempt was made to encourage the children to listen regularly to music on their radio sets and to attend local concerts. But these efforts to achieve higher standards were largely neutralised by outside commercial interests and the public taste of the neighbourhood and environment. To encourage listening in such circumstances was to open the way still further for the impingement of shoddy influences upon the children at a critical stage in their musical development.

By the end of the second year's teaching, all Groups had been introduced to about forty new songs varying from the folk and traditional melodies of their own country and district to classical and modern songs. It was revealing and somewhat discouraging - to say the least - to find that when they were asked to state their favourite songs, and told that in this list may be included songs heard out of school as well as those learnt in the classroom, their lists should have comprised the following items in order of popularity, the songs learnt in school being marked with an asterisk:-

Girls' School.

Group I.

1. Blue Tango.
2. Sugar Bush.
3. High Noon.
4. Poor Little Robin.
5. Kiss of Fire.
6. (Feet Up.
   (Because You're Mine.

8. Singing in the Rain.
9. (When You are in Love.
   (Here in my Heart.
11. Walking my Baby Back Home.
12. (Blacksmith's Blues.
    (Only Make Believe.
    (The Wheel of Fortune.
15. (See the Pyramids along the Nile.
    (You Belong to Me.
17. (The Flower of Killarney.*
    (Drink to me only.*
    (Men of Harlech.*

Group II.

1. Only Make Believe.
2. Never.
3. Here in my Heart.
4. Blue Tango.
5. Walking my Baby Back Home.
6. High Noon.
7. The Flower of Killarney.*
8. O can ye sew cushions?*
9. Cry.
10. Sugar Bush.
11. Fairest Isle.*

Boys' School.

Group I.

1. High Noon.
2. Sugar Bush.
3. Blue Tango.
4. Two-to-Tango.
5. Feet Up.
6. Here in my Heart.
7. Jezebel.
8. Walking my Baby Back Home.

.....

.....

22. The Saucy Sailor Boy.*
23. Golden Slumbers.*

(Two boys mentioned local Tyneside songs - 'The Blaydon Races' and 'The Lambton Worm'.)

Group II.

1. Here in my Heart.
2. High Noon.

3. See the Pyramids along the Nile.
4. Walking my Baby Back Home.
5. (Hey Round the Corner.
   (Forget me not.
7. Drink to me only.*
8. (Billy Boy.*
   (The Bailiff's Daughter of Islington.*

Several other school songs were mentioned by individual boys.

The amount of agreement over the most popular ten songs in both Groups and Schools suggests that they were the ones which were heard most frequently on B.B.C. programmes and in dance halls during the time of the questioning, and proves again that people 'like what they know'. In both the Boys' and Girls' Schools the subjects of Group II placed songs of sentiment at the top of their lists, otherwise the words seem to have left little or no impression. Few children could say what they were about.

The favourite school song of the girls' Group I was a brisk, rhythmical traditional tune, that of Group II a slower traditional Irish song with words which had some slight affinity to some of the popular radio songs listed. A similar result was recorded in the Boys' School where the most popular school songs for Groups I and II were 'The Saucy Sailor' and 'Drink to Me Only' respectively, although they were both followed by contrasted songs - 'Golden Slumbers' and 'Billy Boy'.*

* Songs sentimental in type have for several years headed the popularity lists received as a result of the B.B.C.s "Singing Together" Programme. This programme is designed to be taken by the upper classes of the Primary School where the children's chronological age would correspond with the mental age of the children concerned in this investigation. (Group II).

The school songs which were listed by the children of all four Groups contained a number of titles which belonged essentially to the Primary School. "Drink to Me Only" was a favourite request item at the end of a lesson during the course, but it had not been taught in either of the Modern Schools - although, in fact, the Secondary Stage is the more suitable one for both the words and the music of this song. Such results cause one to question both the choice of songs used and one's own ability to make them come alive as interesting music. Many songs included in school collections are certainly unsuitable for Modern School children, but for this investigation a very careful selection had been made from all the books and sheet copies available.

The girls' background of general listening continued to be seriously limited by environment. Apart from the records used in school, the only orchestral items that had made any impression on the members of Group I were "The Dream of Olwen", "The Glass Mountain", "The Harry Lime Theme" - all of which had been featured in films - "The Blue Danube Waltz", "The Merry Wives of Windsor Overture" and selections from "Swan Lake". Of these, the most popular item was "The Dream of Olwen" which was known to 28% of the class.

Only two orchestras, the Halle and the 'Philharmonic' were mentioned, and no choirs at all. The operas about which the girls claimed some knowledge were a curious mixture - "Madame

Butterfly" and "The Yeomen of the Guard" being the only genuine ones. Other suggestions, - "A Midsummer Night's Dream", "The Great Caruso", "Messiah" and "Merry England" show how little the word 'opera' really meant to the class. One girl had seen a recent University production of Gay's "Beggar's Opera".

None of the children had seen a ballet. 14 of them went to a performance of "Swan Lake" during the recent visit of a touring Ballet Company and 3 had seen "The Red Shoes" as a film. "Giselle" and "Les Sylphides" were also seen at the cinema.

At the beginning of the experiment, the names of only two composers were known. Eleven could now be quoted:- Handel, Beethoven, Bach, Mendelsohn, Mozart, Tchaikovsky, Schubert, Chopin, Schumann, Brahms and Sullivan. But few girls could give the names of any of their works.

The conductors mentioned were a mixed group:- Sid Phillips, Stanley Black, Billy Cotton, Ted Heath, Sir M. Sargent, Sir A. Boult, Sir J. Barbirolli and Rae Jenkins; the pianists were Winifred Attwell, Semprini and five local piano teachers, and the organists, Sandy Macpherson and Reginald Dixon.

The amount of listening outside the school walls done by Group II had not increased at all and after two years remained almost non-existent. The only orchestral works mentioned were "Washington Post" and Handel's "Largo". "The Bee's Wedding" and "The Maiden's Prayer" came from a girl who was having piano lessons.

"The Yeomen of the Guard" had been seen by a few of the subjects and "The Red Shoes" and "Swan Lake" by slightly more. 27 of the class were unable to mention any composer. The largest number of names given was six:- Brahms, Handel, Bach, Chopin, Gounod and Schubert. By one girl Shakespeare was considered a possibility. The investigator was the only pianist or conductor whose name could be recalled.

The boys of both Groups gave fuller details of their listening, but had made little more progress than the girls in absorbing music of a worthwhile quality.

The orchestral listening of Group I was certainly varied: "The Dance of the Sugar Plum Fairy", "Twelfth Street Rag", Beethoven's Fifth Symphony, "The Tennessee Waltz", "Sparky and his Magic Piano", the Cuckoo Waltz", the Ballet Music from "Rosamunde" and "The Dance of the Hours". Several orchestras, two bands and many dance combinations were named. These are listed in order of popularity:- Geraldo's Orchestra, The Palm Court Orchestra, the bands of Stanley Black and Billy Cotton, the Hallé Orchestra and Joe Loss's Band. Other dance bands followed, and at the bottom of the list came three local combinations:- the Salvation Army and Army Cadet Bands and the Seaham Light Orchestra. In the list of choirs the Luton Girls', Ipswich Girls' and Glasgow Orpheus Choirs had been heard by most boys and it was good to find the names of two local choirs, Seaham W. I. and the Hetton-le-Hole Male Voice Choir, mentioned.

4 mebers of the class had seen a recent production of "Madame Butterfly" and others had heard "The Marriage of Figaro" and "Faust". The names of three ballets occurred frequently:- "The Red Shoes" - which had been seen as a film, "Swan Lake" and "Coppelia". Eleven composers were listed by one boy and the average number of names given was five, the Durham musician, William Shield, not being forgotten. Conductors of both light and 'classical' music were listed together:- Sir T. Beecham, Sir J. Barbirolli, Sir M. Sargent, Rae Jenkins, Stanley Black, Billy Cotton and Geraldo. The pianists, except Rawitz and Landauer, and all the organists were associated with light programmes:- Winifred Attwell, Semprini, Charlie Kunz, Reginald Dixon, Harold Smart and Sandy Macpherson. Because of their interest in orchestral instruments the boys were asked to write down the names of any they had heard. This request produced a long list:- piano, drum, side-drum, bugle, tuba, cornet, trumpet, trombone, French horn, violin, cello, double-bass, viola, concertina, accordion, bagpipes, guitar, banjo, mandoline, saxophone, bassoon and double bassoon.

Many of these instruments had been heard at the local variety hall, some of them in bands at Butlins holiday camps, and others in colliery and cadet bands and in a Scottish band which visited the area and made a great impression on all the boys.

The listening of Group II was still more limited. "The Teddy Bears' Picnic" and "Anchors Away" were the only two orchestral items which had been heard by any number of the boys. The most popular instrumental combination was Billy Cotton's Band, although the B.B.C. Light and Symphony Orchestras were both listed. The Luton Girls' Choir again proved the only popular vocal group, but five local Church Choirs and the Cathedral Choir had been heard.

"The Great Caruso", and "The Desert Song" were the nearest approach to opera and the only ballet seen was "The Red Shoes" - a film.

The composers mentioned were Bach, Handel and Beethoven; the conductors, Billy Cotton, Ted Heath, Sir M. Sargent, Geraldo and Henry Hall; the pianists, Charlie Kunz, Dave Kay and three school teachers; and the organists, Reginald Dixon and Dr. Albert Schweitzer. (Schweitzer was a particular hero in the home of one boy who had heard a record of his organ playing).

Their interest in orchestral instruments was as great as that of Group I, and a large number of instruments which they had heard in bands visiting the locality were mentioned by them:- piano-accordion, bagpipes, trumpet, bugle, cornet, trombone, tuba, horn, drum, banjo, organ, harp, saxophone, xylophone, flute, oboe and violin.

All the children in Group II who were learning an instr when they entered the Modern School were still able to pl of the investigation. This was not so with Group I,

unusual perseverance in retarded children at an age when other adolescent interests and games often crowd out the necessary practice time. The standard of performance on the piano of one girl and one boy in Group II was as high as that of any of Group I's instrumentalists, although their choice of music was less worthy. This was probably due to the fact that they were both children of parents who could ill afford to pay for satisfactory teaching.* Another boy who was unable to read musical notation could reproduce with confidence almost anything he heard on the radio, and one girl, although she religiously placed a copy of music in front of her before any performance, used the musical notation purely as a reminder of what she had already memorised from the radio, and played all the music in the key of her own choice - which, with few exceptions, was C major!

* Very few capable instrumental teachers were available in either area.

Chapter XVI.

The Attitude of the Retarded Children in School.

It is comparatively easy to pick out retarded children from their fellows.

The members of Group II in both schools were generally slightly smaller in stature than those of Group I, two boys and at least four girls being stunted in growth. A few subjects who were larger and more flabby than the average were also rather awkward and gawky in their movements. The eyes of all lacked sparkle.

The retarded children were of two main types. The general expression of the one section was vacuous and apathetic. An appearance of heavy drowsiness was characteristic and many of them breathed through their mouths because of blockages in the nose due to adenoid trouble and catarrh. Their lower jaws drooped listlessly and their voices had a hollow ring. They were shy and retiring and their frowned brows suggested that the troubles of the whole world weighed heavily upon them. A hasty word reduced them to tears or a sullen silence, but they responded quickly to encouragement - although they were suspicious of it.

The others were more self-assertive and excitable with a constant movement of hands, eyes and facial features and an inability to concentrate attention for long on any one subject.

Their movements were jerky and they could not sit still for more than a few minutes. Their hands continually shot up to demand attention, and compulsion was often necessary to stop them from moving to the front of the class to ask questions. When unsupervised they maintained a barrage of breathless staccato chatter. Beneath this superficial buoyancy they were pathetically fearful and weak and at the mercy of their moods. Their tears came as easily and freely as those of the diffident children and the same amount of encouragement was required by them before any results were achieved.

The entry of this Group into the classroom was of a boisterous nature, the more retiring children being borne along by the whirlwind of their energetic fellows. It was several moments before the scraping of chair legs and rattling of desk lids had ceased. (Even so, the amount of time taken by this Group to settle down was considerably less than that taken by Group I who were always brim full of vitality and life).

Once the class was seated it appeared to resent further movement - except that instigated by its members - or interference with what had been planned as a pleasant half-an-hour's day dream. The difficulty of keeping this Group mentally alert was always present. There was no known case of deafness, but much that was said passed them by completely and several repetitions of a simple statement were required before its import was fully

grasped. Attention naturally varied from day to day and often with the temperature and atmosphere of the day itself. Dampness of the air was a potent breeding ground for inattention and a warm summer afternoon always secured several victims.

In general there was a genuine desire in the retarded Groups in both schools to give of their best and to work to the limit of their capacity once their interest had been stimulated, but flagging inevitably came much earlier with them than with Group I. There was no method about their performance when they were left alone and they lacked initiative and perseverance.

From time to time the quietness of the classroom in the Girls' School was broken by hysterical little giggles and high-pitched remarks made surreptitiously by one girl to another. The chief disturbance in the Boys' School was caused by a volley of questions delivered at great speed without the preliminary raising of the hand. Owing to the large number of catarrhal complaints there were frequent bouts of coughing and sneezing.

The amount of help this Group offered the investigator in handing out books and pencils, carrying bags and cleaning blackboards was embarrassing, but it was not refused because of the satisfaction the children received in feeling useful and being wanted. The same co-operation was not always present amongst the members of the class. Although they were tolerant of each other's handicaps, there was a large amount of tale-bearing and the children seemed to take some delight in getting

each other into trouble.

The girls enjoyed working together and could only rarely be persuaded to sing or work separately: in the Boys' School the tendency was for individuals to act as soloists rather than to sing in small groups and the competitive spirit was strong.

The Group in both schools entered the classroom looking drab and lifeless (their unkempt, unwashed appearance added to this impression), but they usually became vitalised during the lesson and at times really forceful personalities shone through.

No aspect of practical music making was a bore. It was natural that they should object to so much testing, and one of the investigator's chief difficulties was to coat the pill sufficiently to make it palatable in case undue antagonism or boredom should adversely affect the results of the tests. The majority of the girls claimed an active dislike of school, but this often proved to be due to parental influence, and within the classroom their attitude to the investigator was cheerful and co-operative. The boys showed no such antagonism and appeared to get the maximum enjoyment from every minute of their school life.

The music lesson figured quite high in the order of preference of lessons of both girls and boys:- 6 of the girls and 2 of the boys placed it first, 6 of the girls and 1 of the boys placed it second, and 3 of the girls and 6 of the boys placed it third.

Chapter XVII

Other Tests used during the Investigation.

During the teaching other tests involving various musical elements detailed in Chapter II were used. They were not introduced to the children as "tests", but in the initial stages were always treated as competitions between two divisions of the class, the blackboard being used for scoring purposes. The answers to the final test in each series were written down by the children under examination conditions. It is these which are quoted in every case.

For all these "tests" the piano only was used and as large a repertoire of worthy music as possible was drawn upon.

(a) Pitch Intervals and Rhythmic Groupings.

At the beginning of the investigation the children's knowledge of the sol-fa syllables and the French rhythm names was small, and after the first year's teaching further tests involving these pitch and rhythm elements were given.

Eight pitch intervals were sounded on the piano, six of them starting from the tonic 'doh', one from the supertonic 'ray' and one involving both tonic and supertonic:-

(i) d - s: (ii) d - t: (iii) d - m: (iv) d - r: (v) d - l:
(vi) r - f: (vii) d - d': (viii) d - r - s.

The children were asked to write them down in the tonic sol-fa notation as expressed above.

Eight rhythmic group patterns, each making a bar of four crotchet-value beats and involving only the elements:-  were then tapped to the Group. It was necessary to establish these basic elements before the groups and which had caused difficulty earlier were introduced. The subjects were asked to write them down in the rhythm symbols used in staff-notation as expressed below:-

(i) (ii)

(iii) (iv)

(v) (vi)

(vii) (viii)

One mark was given for each correct answer in both the pitch and rhythm tests.

Pitch.

It was to be expected that the results of a test involving written notation would show a bigger difference in standards between the two Groups. In both schools the results were significant at the 0.01 level. Although 1 girl in Group II scored the maximum mark of 8 and no girl in Group I registered this score, only 4 girls from Group II scored 5 or over as compared with 15 from Group I. 5 girls from Group II registered a zero score. In the Boys' School 15 boys from Group I registered the maximum score as compared with

2 from Group II. The lowest score in the Boys' Group I was 4: in Group II, 4 subjects registered zero.

It would appear that although the sense of pitch discrimination is not lacking in the retarded children their ability to translate the pitch they hear correctly mentally into terms of written notation is far more limited than in the case of the members of Group I.

Rhythm.

This test revealed a clear difference of ability between the Groups and the sexes and the results in both schools were significant at the 0.01 level. In the Girls' School 3 subjects from Group I and 1 from Group II registered the maximum score of 8: 12 girls registered a zero score. In the Boys' School, 12 subjects scored the maximum mark and 10 others registered a score of 10. 5 boys from Group II registered a zero score.

It would appear that the translation of sounds into written notation is a more difficult task for the members of Group II than for those of Group I, and one which requires careful consideration before it is incorporated as a regular feature into any scheme of music teaching for retarded children.

(b) Simultaneous Tunes Test.

Test V of the tests of musical awareness devised by the investigator and given at the beginning of the experiment was an attempt to assess the degree of the awareness of the subjects to the performance of two melodic fragments played simultaneously on the piano.

Another test to assess the same ability was given during the experiment. The melody of a well-known song or hymn was played on the piano, but not necessarily by the right hand as the "highest" tune. Sometimes it was given to the left hand, sometimes to the thumb of the right hand. While it was being performed, without exaggerated prominence, the other hand, or perhaps other fingers on the same hand, played decorative accompaniments and descants. These were sometimes simple, at other times quite elaborate. The subject was asked to discover amongst these various lines of sound the well-known tune and to write down its name. This test has often been used by practising teachers as an introduction to a course of training in intensive listening. The discovery of the "tune" implies that the children can hear more than just the highest line of sound and that they will, therefore, be able to follow the simple inner parts (e.g. alto or viola) of the choral and instrumental works to which they listen later. (The introduction of easy string quartet and orchestral scores for following and reading purposes would have been the next stage of aural training attempted with the Groups concerned in this investigation if the teaching had continued for the remaining two years of the children's school life).

Several books of combined tunes suitable for use have been been published. The eight tunes selected were taken from the two books of "Hidden Tunes" compiled by Dr. Geoffrey Shaw, and were all familiar to the subjects:-

(1) All through the night - Tune in the bass (3 parts)

(2) Early one morning - Tune in the middle part (3 parts)

(3) Begone, dull care - A varied version of the tune in the top part (3 parts)

(4) God Save the Queen - Tune in the alto part (4 parts)

(5) Three Blind Mice - Tune in the middle part (3 parts)

(6) The Blue Bells of Scotland - Tune in the tenor part (4 parts)

(7) Good King Wenceslas - Tune in the middle part (3 parts)

(8) Drink to me only - Tune in the alto part (4 parts).

One mark was awarded for the correct title of each "hidden tune". If the title was not completely accurate, but there was sufficient indication that this was due to inadequacy of expression, not of listening, a mark was still given.

In the Girls' School the difference between the Groups was not appreciable - indeed 6 girls from Group II registered higher scores than any from Group I - and the result was significant only at the 0.90 level. The boys of Group I showed a marked superiority over those of Group II, 31 of them registering scores of 4 or over as compared with only 4 of Group II. Here the result was significant at the 0.01 level.

(c) Key.

The ability to recognise the modulation of music from one key to another is possessed by many children who are unable to describe the type of modulation effected. In the present test the children were only asked to state whether the section of music played to them ended in the same key in which it had begun or in another. When it was the same they wrote "S", when different, "D". Ten harmonised melodies, not taken from any music familiar to the children, were played on the piano. Five of them remained in the tonic key, two of them modulated to the relative minor, two to the dominant, and one to the sub-dominant key. Eight of the melodies began in the major and two in the minor modes. Their maximum length was four bars.

One mark was given for each correct answer.

The results of this test were significant at the 0.02 level in the Girls' School but only at the 0.70 level in the Boys' School.

The scores suggest that as a Group the retarded boys had as alert a sense of key change as the members of Group I. No boy registered the maximum score of 10, but 3 subjects from Group II scored 9 (as compared with 1 subject from Group I). In the Girls' School the members of Group II seemed to do slightly less well than those of Group I. The highest score in Group II was 8 registered by 2 girls, and 13 girls from this Group scored 5 or less. 1 subject from Group I registered a score of 9 and only 9 girls had 5 or less.

From these results it would be dangerous to assume that the retarded children were sufficiently lacking in an awareness to change of key to be debarred from the variety and enjoyment which such modulations produce in a musical composition.

(d) The Number of Beats in a Bar.

The test described next is one of ten used by class teachers and examiners to test the awareness of children to the fundamental pulse throbbing through all music and to the manner in which it is grouped into "bars" of Duple or Triple Time.

Twenty pieces of music were played on the piano in their entirety, and the children were asked to state whether the bars of each contained three or four beats. Bars of two beats were avoided, because they are difficult to distinguish from bars of four beats without the imposition of an artificial "bump" in the first of each pair.

The music played was taken either from compositions of well-known composers or from songs and hymns which had been sung in the schools. Where an alternative is noted in the following list it is because one of the titles was a song familiar at the Boys' School (B), the other at the Girls' School (G):-

(i)	Country Gardens	- Grainger
(ii)	Largo	- Handel
(iii)	O can ye sew cushions? (G)	- Scots Folk Song
	In Poland stands an Inn (B)	- European Folk Song
(iv)	Theme I from the Last Movement of Symphony No. 1.	- Brahms
(v)	Pigeons (G)	- Rathbone
	Creation's Hymn (B)	- Beethoven
(vi)	Entracte from "Rosamunde".	- Schubert
(vii)	Minuet from the Overture to "Sampson"	- Handel
(viii)	Jesu, Joy of Man's Desiring	- Bach
(ix)	For all the Saints ("Sine Nomine")	- Vaughan Williams
(x)	Waltz in B minor	- Chopin
(xi)	Air from the "Water Music"	- Handel

(xii)	City of God - "Richmond"	- Haweis
(xiii)	Lavender's Blue	- North Country Folk Song
(xiv)	Trumpet Voluntary	- att: Clarke
(xv)	Dance of the Blessed Spirits, "Orpheus"	- Gluck
(xvi)	Caller Herrin'	- Scots Folk Tune
(xvii)	The First Nowell	- English Carol
(xviii)	"Ode to Joy" from the last Movement of Symphony No.9	- Beethoven
(xix)	Flocks in Pastures Green Abiding	- Bach
(xx)	Men of Harlech	- Welsh Traditional Melody.

Of the works of the better known composers, only Handel's "Largo", the "Trumpet Voluntary" and "Jesu, Joy of Man's Desiring" were recognised as familiar tunes by any of the children.

The maximum number of marks obtainable in this test was 20.

The difference between Groups was not clearly marked in this test and the results in both Schools were significant only at the 0.50 level. No subject scored the maximum mark of 20, 4 girls divided equally between Groups I & II scored 19 and 1 boy from Group I registered the same score. The lowest score, 7, was registered by a boy from Group I.

It is clear from the results that in this particular test the retarded children were generally aware of the underlying pulse in the music to which they listened, and were able to group the pulses of many of the melodies into the orthodox bars demanded by musical notation.

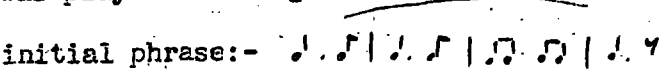
(e) Form.

The limited time available allowed little opportunity for the question of "form" in music to be dealt with in any detail, although the conception of "shape" inevitably entered into all the practical music-making which was undertaken, and songs were sung in a manner which made their structure clear, and showed to the children how the elements of repetition and contrast were essential to the simplest compositions.

As the three forms, Binary (A, B), Ternary (A, B, A or A, A, B, A) and Rondo (A, B, A, C, A) are those which are most frequently met in songs and other vocal works, these were the ones which received most attention.

From time to time the children were asked to raise their hands or give some other specific indication when they heard the repetition of the main theme. By the end of the Course all the subjects in both Groups and Schools were able to do this without hesitation or mistakes. There was no significant difference in the rate of progress in awareness to the basic forms between either of the Groups or sexes, and no written test was given.

In the Girls' School as an additional test of memory and a means of discovering whether the children could remember a tune sufficiently well to notice its recurrence - and consequently to follow the form of the piece of music - a record of Rondo from

Haydn's Trumpet Concerto was played. The girls were asked to state how many times the initial phrase:-  appeared. In Group I 19 girls (59.38%) gave the correct number: in Group II 18 girls (60%). This suggests that a large number of the retarded girls were able to recognise a melodic and rhythmic phrase on its reappearance and to concentrate sufficiently long to be aware of the actual number of times it was played.

(f) Phrase Lengths and the Number of Phrases in Melodies.

Cadences divide music into phrases of certain lengths, usually - but not invariably - of two or four bars. Nor is there a stipulated number of phrases needed for the creation of a melody, although four is a common number. Much of the variety of any composition depends upon the careful use of irregular phrasing.

In this test the melodies of eight British or European Traditional Songs were played on the piano:-

(i) This Garden Now - Welsh
(ii) Sweet Inisfallen - Irish
(iii) Silent, O Moyle - Irish
(iv) The Rising of the Lark - Welsh
(v) Why Lingers my Gaze? - Welsh
(vi) The Oak and the Ash - English
(vii) That's Seven - German
(viii) Say ye Masters - Hungarian.

The children were asked to discover (1) how many bars there were in each phrase and (2) how many phrases were used in each tune.

One mark was given for each correct answer. It was essential for both parts of the test to be answered correctly to secure a mark.

The result of this test was significant at the 0.01 level in the Girls' School. No girl registered the maximum score of 8 and none had lower than 2. 8 girls from Group I, as compared with only 1 from Group II, registered 7, and 28 girls from Group II, as compared with 20 from Group I, scored 5 or below.

In the Boys' School, 1 subject only registered the maximum score and he was from Group II. All the members of Group I had scores ranging from 6 to 3 inclusive. The result was significant at the 0.10 level and showed no appreciable difference between groups.

(g) Cadences.

The importance of "cadences" as punctuation marks in music has already been emphasised.

The only two cadences which were introduced to the children were the Perfect or Full Close, (Dominant to Tonic, V-I) and the Interrupted, (limited in this test to Dominant to Submediant, V-VI). It was felt that these would be the most easily distinguishable of the four usual cadences from the immediate sound impressions of "complete repose" and "disturbance" and that it would be wise to avoid confusion by introducing only these two cadences for testing purposes.

The cadences were used in phrases of four bars length and were not taken from the works of recognised composers - although the examples of them given as illustrations during class work were all found in hymns and songs familiar to the children. They were played on the piano in the four-part harmony version (S.A.T.B) generally used by choirs, and the children were asked to state whether they were "Perfect" or "Interrupted" by writing "P" or "I".

One mark was given for each correct answer.

The results of this test were far less significant in the Girls' School (at the 0.50 level) than in the Boys' School (at the 0.01 level). The scores registered by the subjects would suggest that the retarded girls did not lag appreciably behind the members of Group I in their recognition of the cadence points, but that the boys of Group II were less aware of this feature of musical structure than those of Group I.

(h) Deferred Recall.

As Test No. IX of his "Tests of Musical Ability" Mainwaring introduced a test which he called "Deferred Recall". It was a test designed to assess the ability of the subject to recall musical features of a tune with which he was familiar, without having the tune played or sung to him at the time of the recall. In it the name of a well-known tune was mentioned to the subjects who were then expected to recall and hear the tune mentally. Two conditions were essential: (1) that the tune must not be heard at the time of the test, and (2) that it should not be played or sung to the subjects before the test with any suggestions that questions were going to be asked about it. If these two conditions were observed, it was immaterial how recently the tune selected for the test had been heard by the subjects.

The test of Mainwaring was introduced into the present investigation. The one tune with which it was thought all Groups would be familiar was the National Anthem. Even then two boys claimed never to have heard it, and their inability to repeat the words seemed to validate their assertion. But as "God Save the Queen" is frequently used in both schools as well as at outside functions it seemed a fair test for the vast majority of the children.

Eight questions were asked about it:-

1. Are the first two notes the same, or does the second one move up or down? ("S" - same; "U" - up; "D" - down).

2. How many notes are there in the first phrase?

3. Which word is sung to the highest note?

4. Write down the rhythm of the notes used to the words "gracious Queen".

5. How many times does this rhythm (the rhythm to "gracious Queen") occur in the tune?

6. How many phrases are there in the tune?

7. How many more of them have the same rhythm as phrase I?

8. Does the tune end on the note on which it began or one higher or lower? ("S" - same; "H" - higher; "L" - lower).

In this test one mark was given for each correct answer.

In both schools the results of this test were significant at the 0.02 level. The test involved memory, and the retarded children in both schools showed up less well than the members of Group I. The highest score of 8 (out of a maximum score of 10) was registered by 2 boys from Group I. 2 girls and 1 boy from Group II registered zero scores.

Although the retarded children were able to memorise and retain the melodies of unison songs, these results suggest that they might not find it easy to recall features of songs they had learnt or the music to which they had listened without a recent reminder. In fairness it should be pointed out that the scores of the subjects of Group I are not high and that they too found the test difficult.

(i) The Major and the Minor Modes.

Although the children had not learned about the technical construction of the major and minor scales, the amount of music which they had heard in these two modes had developed in them an awareness to the difference between their "colours". Sometimes this was expressed as an aural and sometimes as a visual conception. The important factor was the power of discrimination; its source seemed immaterial, and revealed how varied is the effect of music on individuals and how subjective its appeal. Twenty tunes were played on the piano and the children were asked to describe them either as "Major" or "Minor". The melodies were all hymns or national songs, except "The Arethusa", a song attributed to the Durham composer, William Shield, and "Now is the Year of Jubilee" a setting of words to music from Bach's Cantata No. 122.

1. My love's an Arbutus - Irish Melody
2. "Aberystwyth" - J. Parry
3. The Ash Grove - Welsh Traditional Song
4. Sweet Inisfallen - Irish Traditional Song
5. There was a Jolly Miller - English Traditional Song
6. "Twas pretty to be in Balinderry - Irish Traditional Song
7. Avenging and Bright - Welsh Traditional Song
8. The Arethusa - Wm. Shield
9. The First Nowell - English Traditional Carol
10. Loudly Proclaim - Welsh Traditional Song
11. Hunting the Hare - Welsh Traditional Song
12. Over the Stone - Welsh Traditional Song
13. I've found my Bonny Babe a Nest - Irish Traditional Song
14. Forth to the Battle - Welsh Traditional Song
15. God rest you merry - English Traditional Carol
16. O Little Town of Bethlehem - English Carol
17. Now is the Year of Jubilee - J. S. Bach
18. Good Morrow, Mistress Bright - English Traditional Song
19. "Heinlein" - M. Herbst
20. Caller Herrin' - Scots Traditional Song

No girl registered the maximum score of 20. 1 girl from Group I and 2 girls from Group II scored 18. 10 members of Group I registered scores of 9 or less. The lowest score made by a member of Group II was 10. The result was significant at the 0.10 level.

In the Boys' School the result was less significant - only at the 0.50 level. Here the retarded children again did well, 12 of them scoring 16 or over as compared with 14 from Group I, and 1 of them registering a maximum score. The lowest score of Group I was 11, of Group II, 13.

It would appear from these results, that compared with the members of Group I, the retarded children are not unduly deficient in awareness to major/minor relationships.

The Frequency Distributions of all the Tests described above are included as Appendix I.

Chapter XVIII.

Tests of Musical Awareness (II).

At the conclusion of the course the original battery of Tests of Musical Awareness was again given to all the subjects who had taken them at the beginning of the experiment. There had been no special coaching in the meanwhile, although the musical elements involved in the testing were inherent in all the work which had been done during the two years.*

The results of my own tests varied slightly after the children's second attempts, but this was perhaps to be expected, as the battery was constructed to test the awareness of the subject to certain basic musical elements. One could fairly assume that this awareness would be more acute and sensitive after two years' teaching than it was when the children entered the Modern School from their various contributory schools.

Seashore's assertion about pitch applies equally to the other musical elements:- "Training probably does not modify the capacity of the sense organ any more than the playing of the good violin may improve the quality of its tone; but however good the sense of pitch may be, it demands training in proportion to the

* In a letter to the "Times Educational Supplement" of February 13th, 1953, Wing stated ".....tests of musical intelligence have, so far, shown little or no sign of being affected by coaching."

natural capacity in this sense.....The trouble with flattening, slovenly intonation, inability to sing intervals, poor timbre, control of voice or instrument by a person with a good sense of pitch, may be a slovenly ear, an uncritical ear, or an untrained ear, not motor or muscular trouble."[66]

In certain test items regression rather than progression was registered. This may have been due to external factors, to a misunderstanding of the instructions, or to a lack of interest occasioned by the age of the children* and the considerable amount of testing they had undergone during the investigation.

The difference between the distribution of scores of the retarded and normal children is less noticeable than when the tests were originally given and the results are generally less significant. The frequency distribution for each of the tests are added at the end of the thesis as Appendix H.

In Test I (Pitch Discrimination Test) the girls of both Groups would appear to have made greater progress in Pitch Discrimination than the boys; fewer boys registered the maximum score of 8. But whereas originally 2 girls and 8 boys from Group II had scores of 3 or under, now 3 girls and 5 boys fall into that category. The results were significant in both the Girls' and Boys' Schools at the 0.01 level.

* Early adolescence is a notoriously difficult time for the teaching of music to children.

In Test II (Melody Test) the results were significant only at the 0.90 level in the Girls' School and at the 0.30 level in the Boys' School. 7 boys from Group I registered the maximum score (as compared with 2 in the first playing of the tests) and 4 girls from Group I scored 7. This was the highest score for the girls in the first playing, registered by 1 subject from the same Group. But 2 retarded girls now registered a zero score. The lowest score for the boys was 2, made by 4 subjects.

The results of Test III (Rhythm Test) were significant only at the 0.50 level in the Girls' School and only at the 0.30 level in the Boys' School. The scoring suggests that the girls were generally more aware of the appropriate use of Rhythm in this particular test than the boys, and that the retarded pupils were not greatly inferior to the members of Group I. In the Boys' School, the lowest mark scored by the retarded boys was 3, that by the boys of Group I, 1.

As was noticed when the tests were first given, there was a bigger difference between the Groups in Test IV (Memory Test), and the results were significant in the Girls' and Boys' Schools at the 0.01 and 0.05 levels respectively. It would appear from the results that both the girls and boys of Group I were greatly superior to the members of Group II, and the retarded girls were less able than the retarded boys, although the results of some of them showed an improvement on those registered after the first testing.

The results of Test V (Two-Melody, Counterpoint, Test) were significant only at the 0.30 level in the Girls' School and at the 0.02 level in the Boys' School. 1 retarded boy and 3 retarded

girls registered a maximum score in this Test. None were able to do so when the tests were first given. Only 1 zero score was registered, by a girl from Group I.

Test VI (Timbre Test) suggested an improvement in discrimination in all groups. The results were significant in the Girls' School at the 0.01 level, in the Boys' School at the 0.30 level. The most noticeable improvement was in Group II of the Boys' School. (It is this Group which had the most leeway to make up in their listening to music as a result of their fragile musical backgrounds).

Tests VII (Harmony Test) and VIII (Phrase Structure Test) were both tests of "Appreciation". The results were not significant. In Test VII they were significant at the 0.20 level in the Girls' School and at the 0.30 level in the Boys' School: in Test VIII the levels of significance were 0.50 in the Girls' School and 0.20 in the Boys' School.

In both tests the retarded Groups showed a marked improvement on the original results in their awareness to the musical factors of harmony and phrase structure.

Nearly two years had elapsed since the Tests of Musical Awareness had first been given to these Groups of children. The results again suggest that the subjects of Group II do not lag sufficiently behind those of Group I in their awareness to the essential elements of music to justify the classroom teacher's concern that the time he spends with them on music could be more profitably devoted to other activities.

Chapter XIX.

Individual Testing.

At the end of the investigation each subject was tested individually. All but one of the tests given (No. 3) involved factors which made group testing impossible. The music used for this purpose is included at the end of the chapter; the alternatives were provided to obviate the passing on of information from one child to another.

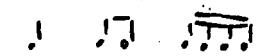
In Test I the subject was asked to sing back a short melodic fragment of not more than six notes after it had been played three times on the piano. Before each playing the key note and key chord were sounded. Two melodies were given in this manner, one (a) in the major mode, the other (b) in the minor mode. This test involved pitch discrimination, awareness of rhythmic groupings and memory. It linked up with Tests I & III of the original battery of tests, although the ability to reproduce pitch and rhythm vocally now entered as an important factor.

Test 2 tested for the same ability as Test V and, to some extent, Test VI of the original set, but it again involved vocal reproduction. Two small melodic fragments, each consisting of four notes and each complete in itself were played simultaneously on the piano three times. No question of rhythm was involved. Before each playing the key note and the first pair of notes were sounded. The subject was asked to sing the lower of the two melodic fragments.

Test 3 was also dependent upon accurate pitch discrimination. Three intervals, each starting from the tonic, were played twice on the piano. The subject was asked to name the intervals either with the tonic sol-fa syllables or numerically. In the latter case no finer gradation than the number was expected, e.g. '5' could stand for a perfect, augmented or diminished 5th.

Test 4 was a rhythm test and was related to Test II of the original series. Two harmonised melodies, one with four beats in the bar and one with three, were played through three times each. During the first two playings the subject was asked to decide how many beats each bar contained and in the third playing to conduct the melody with the number of beats decided upon. This elementary conducting introduced an extra factor of muscular control, but as plenty of practice in beating had already been given during the course, it caused no added difficulty at this stage.

Test 5, in two parts (a) and (b) was also related to Rhythm and was concerned with the underlying pulse and the "time patterns" superimposed upon it:-

(a) A short phrase of two complete bars of four beats and involving the rhythmical elements:  was played three times on a monotone. After the third playing the subject was asked to clap or tap it back to the tester.

(b) Another short phrase of three complete bars of melody involving the rhythmic elements:  was then played three times on the piano, and the subject was asked to

clap or tap back the rhythm of it to the tester after the third playing. The actual physical movements involved in the reproduction of the rhythm of such a test sometimes cause some difficulty to children whose muscular co-ordination is not good.

Tests 6 and 7 were both concerned with music reading. This had, as yet, not been given any test, except during the normal lessons in class.

In Test 6 the subject was asked to read and clap from notation a short phrase of two or four complete bars in 3 or 4 pulse time involving the rhythm elements already used in Test 5. Three or four steady beats were first given by the tester as an indication of the tempo expected.

In Test 7 pitch as well as rhythm was included. The subject was asked to read two short melodies in the major mode, the first being stepwise with the exception of one small leap of a third, the second being a mixture of steps and leaps.

It was difficult to award marks for these individual tests. Instead the subjects were placed into two or three categories, A.B., or A.B.C., for purposes of comparison. The Chi-Square Test was again used as a test of significance.

Test IA.

Girls' School.	A	B	C	
Group I (No. of subjects)	26	2	4	32
Group II (")	15	13	2	30
Boys' School.	A	B	C	
Group I (No. of subjects)	27	3	2	32
Group II (")	17	7	6	30

In the Girls' School the result of Test IA was significant at the 0.01 level, although only 2 girls from Group II were placed in the "C" category, as compared with 4 from Group I. At the opposite extreme there were more girls in the "A" category from Group I than from Group II.

The result of the same test in the Boys' School was significant at the 0.10 level. The distribution of subjects into the categories "A", "B" and "C" would suggest that the members of Group I showed superiority in this particular test.

Test IB.

Girls' School.	A	B	C	
Group I (No. of subjects)	24	4	4	32
Group II (")	24	2	4	30
Boys' School.	A	B		
Group I (No. of subjects)	30	2		32
Group II (")	25	5		30

A smaller difference between Groups was apparent in the results of Test iB in which a minor melodic fragment had to be sung back by the subject to the investigator. The result in the Girls' School was significant at the 0.95 level, and in the Boys' School at the 0.30 level. The range of ability amongst the boys was small and only the first two categories, "A" and "B", were required. It is interesting to compare the results of this test with those of the Major/Minor Test given during the actual class-teaching when the work of the retarded children again compared favourably with that of the members of Group I.

Test 2.

Girls' School.	A	B	C	
Group I (No. of subjects)	20	8	4	32
Group II (")	17	6	7	30
Boys' School.	**A**	**B**	**C**	
Group I (No. of subjects)	19	8	5	32
Group II (")	5	13	12	30

In Test 2 the results were less significant in the Girls' School (at the 0.50 level) than in the Boys' School (at the 0.01 level). This has been true of all the tests involving a two-melody relationship. - No. 5 of the Tests of Musical Awareness (i) and (ii) and the Simultaneous Tunes Test given during the classroom teaching. In each case the members of Group I in both schools appear to show a superior ability in discrimination between the two lines of melody.

Test 3.

Girls' School.	A	B	C	
Group I (No. of subjects)	3	12	17	32
Group II (")	4	4	22	30
Boys' School.	**A**	**B**	**C**	
Group I (No. of subjects)	16	7	9	32
Group II (")	4	4	22	30

The result of Test 3 in the Boys' School was significant at the 0.01 level and in the Girls' School at the 0.05 level. The distribution of subjects suggests that the boys of Group I were superior to any other Group, but that the retarded girls and boys did not lag far behind the girls of Group I. The question was of a technical nature, not an assessment of the subjects' appreciation of the sound of the intervals. Such technical questions were always answered better by the boys of Group I. No other test of a

similar nature was given during the investigation.

Test 4a.

Girls' School.	A	B	C	
Group I (No. of subjects)	13	8	11	32
Group II (")	10	11	9	30
Boys' School.	A	B	C	
Group I (No. of subjects)	13	13	6	32
Group II (")	7	19	4	30

Test 4a showed little real difference of standard between the Groups. The result in the Girls' School was significant only at the 0.10 level, in the Boys' School only at the 0.50 level.

Test 4b.

Girls' School.	A	B	C	
Group I (No. of subjects)	28	4		32
Group II (")	13	17		30
Boys' School.	A	B	C	
Group I (No. of subjects)	11	12	9	32
Group II (")	12	8	10	30

In Test 4b - a similar test but involving 3/4 time instead of 4/4 time - the difference of ability between the Groups in the Girls' School was more marked. Here the result was significant at the 0.01 level, and the range of ability so limited that only two categories were required. In the Boys' School the difference was hardly noticeable, the degree of significance being only at the 0.50 level.

Test 5a

Girls' School	A	B	C	
Group I (No. of subjects)	15	17		32
Group II (")	5	25		30
Boys' School.	A	B	C	
Group I (No. of subjects)	19	10	3	32
Group II (")	10	16	4	30

Test 5a revealed a big difference between Groups in the Girls' School and the result was significant at the 0.01 level. In the Boys' School the difference was less clearly marked and the result was significant only at the 0.10 level.

Test 5b.

Girls' School.	A	B	C	
Group I (No. of subjects)	13	11	8	32
Group II (")	6	18	6	30
Boys' School.	A	B	C	
Group I (No. of subjects)	14	12	6	32
Group II (")	3	16	11	30

In Test 5b, which involved the singing back of a melodic as well as a rhythmic pattern, the opposite results were registered. The result in the Girls' School was now significant at the 0.10 level, and in the Boys' School at the 0.01 level.

Test 6.

Girls' School.	A	B	C	
Group I (No. of subjects)	8	16	8	32
Group II (")	3	7	20	30
Boys' School.	A	B	C	
Group I (No. of subjects)	12	16	4	32
Group II (")	5	8	17	30

As the results obtained from previous tests given during the investigation would lead one to expect, the element of notation reading involved in Test No. 6 caused a noticeable difference between Groups I & II in both the Girls' and Boys' Schools - the results in both schools being significant at the 0.01 level.

Test 7a.

Girls' School.	A	B	C	
Group I (No. of subjects)	13	11	8	32
Group II (")	11	14	5	30
Boys' School.	A	B	C	
Group I (No. of subjects)	6	10	16	32
Group II (")	3	18	9	30

Test 7b.

Girls' School.	A	B	C	
Group I (No. of subjects)	12	3	17	32
Group II (No. of subjects)	2	8	20	30
Boys' School.	A	B	C	
Group I (No. of subjects)	6	7	19	32
Group II (")	3	5	22	30

Tests 7a and 7b involved the reading of both pitch and rhythm notation.

In Test 7a the result in the Girls' School was significant only at the 0.50 level, in the Boys' School only at the 0.10 level.

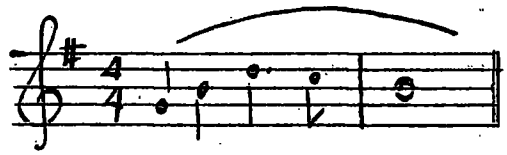
Test 7b showed a clearer difference between Groups in the Girls' School, the result being significant at the 0.01 level. In the Boys' School, although only a small proportion of boys from Groups I or II were placed in category "A", the result was less significant - only at the 0.50 level.

The results of this Individual Testing tend to confirm the observation already made with regard to other tests used during the investigation, viz., that an awareness to the fundamental elements of music is not sufficiently lacking in the retarded children to justify their exclusion from many normal musical activities. These individual tests also confirm that the limitations of the members of Group II are more evident when musical notation (either pitch or rhythm) forms an essential part of the scheme of work than at any other time.

Individual Tests.

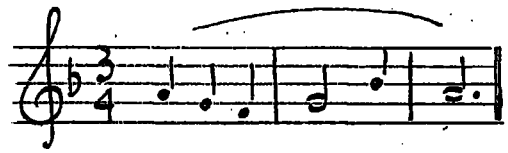
1.

(a)

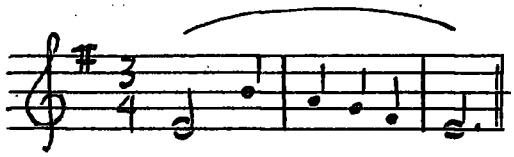


or

(a)

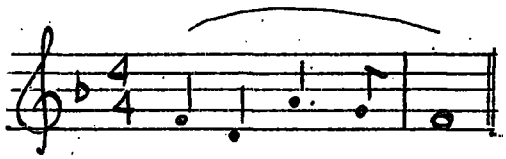


(b)

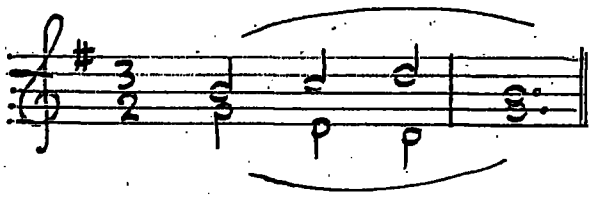


or

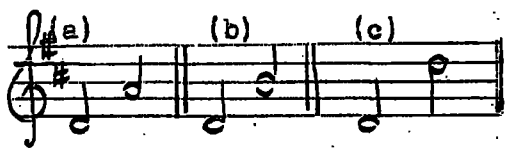
(b)



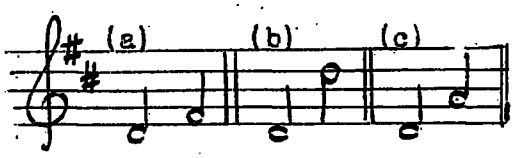
2.



3.

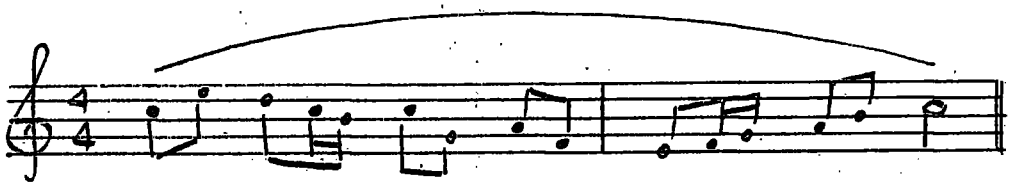


or

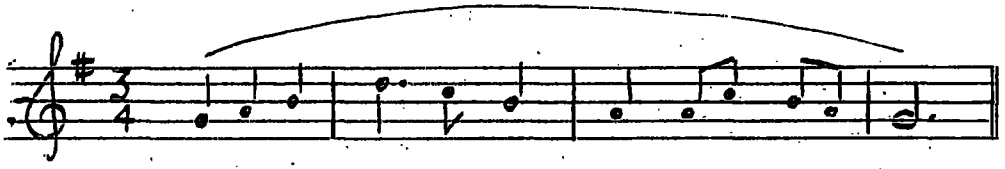


4.

(a)

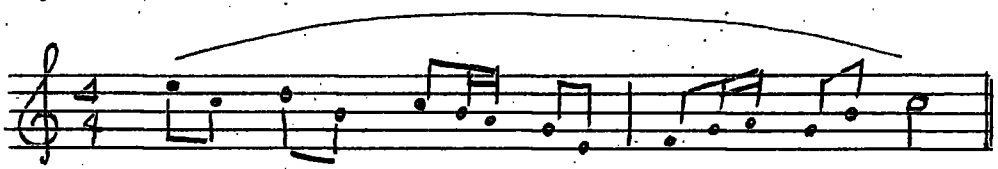


(b)

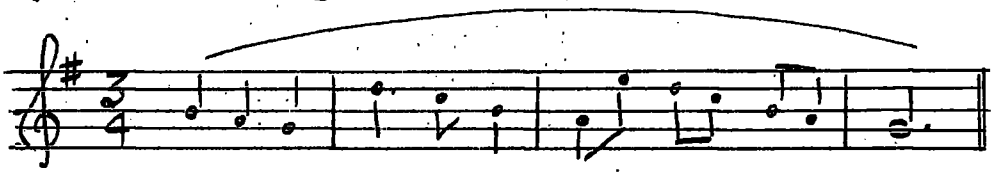


or

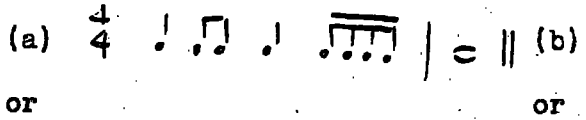
(a)



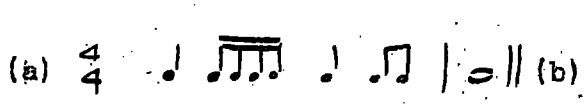
(b)

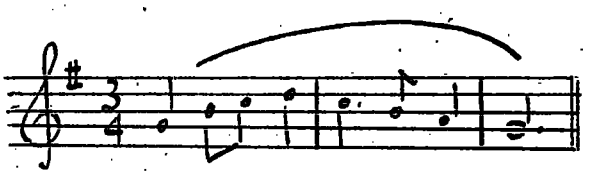


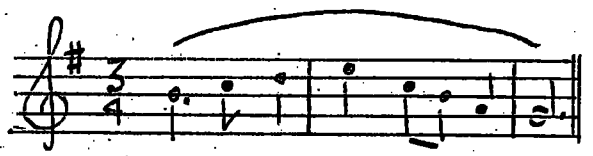
5.

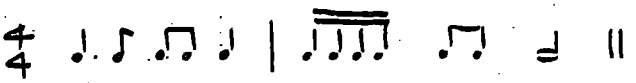
(a)  (b)

or

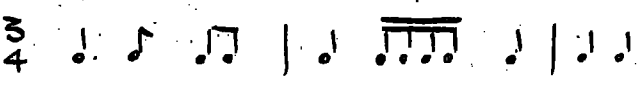
(a)  (b)



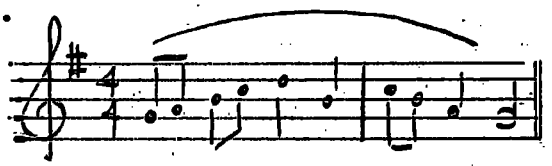
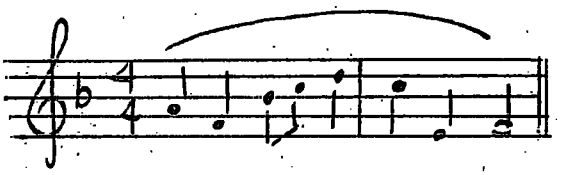




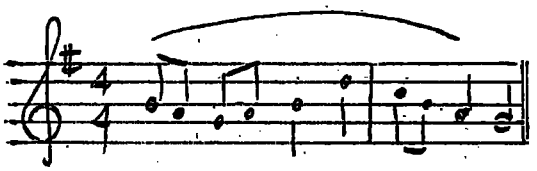
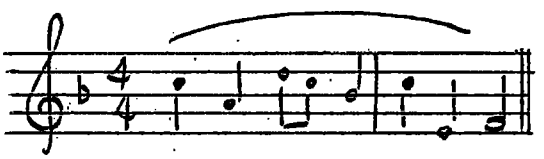
6. or



7.

(a)  (b) 

or

(a)  (b) 

Chapter XXI.

SUMMARY OF RESULTS.

As was stated in Chapter II the two fundamental elements of music to which a child must be aware before a musical education can be of any benefit to him are pitch and rhythm.

It is quite clear from the results of Test I of the Tests of Musical Awareness (i) and (ii) that the retarded children concerned in the present investigation were not deficient in a sense of pitch discrimination.

In their ability to follow the pitch variations of a melody (Test II of the same battery) there was little apparent difference between the members of Groups I and II. (An extra-musical factor, the visual element, was introduced into this test, and may have affected the results).

During the Individual Testing given at the end of the investigation the singing back of a major melody (Test IA) revealed some difference between the two Groups in the Girls' School in favour of the members of Group I. In the Boys' School the difference, in favour of the same Group, remained slight. In Test IB of the same series, in which a minor melody was introduced, and by which time any trace of nervousness may have disappeared, there was no difference between the Girls' Groups I & II. In the Boys' School the difference was hardly noticeable. (The result of the Classroom Test *(i) involving discrimination between major

* In order to avoid circumlocution the nine tests given during teaching periods and described in Chapter XVII are referred to in this Chapter under the general heading "Classroom Tests".

and minor melodies also showed no significant difference between Groups in either school).

Another test concerned with pitch discrimination, but involving a little more precise technical knowledge was Test III of the Individual Tests, in which the numbers of the intervals sounded by the investigator had to be named by the subjects. The difference between the Girls' Groups was not significant: in the Boys' School the difference was more apparent and was in favour of Group I.

When the classroom Test (a i) necessitated the writing down of intervals in pitch (sol-fa) notation, the difference between the Groups was noticeable, the members of Group II in both schools finding the writing of music a difficult activity.

The reading of pitch from staff-notation in Tests VIIa and VIIb of the Individual Tests revealed less difference between the Groups, only Test VIIb in the Girls' School producing a result which was significant - in favour of Group I.

The results of all these tests suggest that the retarded children possessed a sufficiently strong sense of pitch and pitch discrimination to participate in many musical activities of the school, although any work involving the writing down of pitch notation might be expected to cause some difficulty.

The scope of Rhythm is so vast that it is not easy to test a child's awareness to it in quantitative terms.

The retarded children with whom the investigator was concerned recognised the underlying pulse of the music to which they were listening and were generally able to group the pulses into the conventional bars of duple and triple time. There was no appreciable difference between the Groups in the "Beats-in-a-Bar" Test (d) of the Classroom Tests: and in Tests IVa and IVb of the series of Individual Tests - both of which involved recognition of the number of beats in a bar and conducting - the only significant difference between Groups I & II was shown in the results of Test IVB in the Girls' School. (This melody was in 3/4 time: Group II girls always seemed to find 3 more difficult to beat than 4).

In Test No. 3 of the Tests of Musical Awareness (i) and (ii) - a test which involved the appropriate grouping of pulses and accents into bars - there was no appreciable difference between the Groups.

The results suggest a greater difference in Groups when larger rhythmic units were involved. In the Phrase-Lengths Test (f) of the Classroom Tests the result was significant and in favour of the members of Group I in the Girls' School: in the Boys' School the results suggested that Group I was only slightly superior.

The recognition of cadences helps to determine the length of a phrase, and closely related to the Phrase-Lengths Test was the Cadence Test (g) of the Classroom Tests. In this test there was no real difference between the Groups in the Girls' School: in the Boys' School the difference was slightly more noticeable, but not of real significance.

It was when the rhythm groups, either as French time-name sounds or in written notation were introduced that the difference between the Groups became clear.

In Tests Va and Vb of the Individual Tests which involved the imitation by the subjects of rhythmic groups which had first been clapped by the investigator, the difference was more noticeable. The results of Test Va in the Girls' School and of Test Vb in the Boys School revealed a significant difference between the Groups. The differences as suggested by the results of Tests Va of the Boys' School and Vb of the Girls' School were less apparent. In all cases any superiority was shown by the members of Group I.

Test VI of the Individual Tests was one of rhythm reading from notation. Here the results in both schools were significant in favour of the members of Group I and the same significant difference between Groups was registered in the Rhythmic Grouping Test (dii) of the Classroom Tests in which rhythmic groups had to be written down by the subjects after they had first been tapped by the investigator. Here the limitations of the members of Group II were very apparent.

It would appear from these results that the retarded children concerned in the present investigation were not lacking in an innate awareness to pulse and Rhythm, but that when this awareness had to be translated into precise oral or written expression they made slower progress than the members of Group I.

In Chapter II it was observed that since music is no longer confined to unisonal unaccompanied melodies it is essential for practising musicians and helpful for all listeners to be able to hear and follow more than one line of music at a time.

Test V of the Tests of Musical Awareness was a Two-Melody (Counterpoint) Test. When this test was first given the result in the Boys' School was significant in favour of Group I: in the Girls' School there was little difference between Groups. When the test was repeated towards the end of the investigation there was still no difference in the Girls' School and the degree of significance in the Boys' School had been reduced.

A somewhat similar, though rather more elementary, test was the Simultaneous Tunes Test (b) of the Classroom Tests. Here the difference between Groups in the Girls' School was very slight: in the Boys' School the result was significant in favour of the members of Group I.

The result of Test II of the Individual Tests - a test in which the lower of two melodies had to be sung back to the investigator - was also significant in the Boys' School in favour of the same Group. In the Girls' School there was no appreciable difference between Groups.

Related to this test was No. VI - Timbre Test - of the Tests of Musical Awareness. The results of this test when it was first given were significantly in favour of Group I in both Schools. When the test was repeated, the result remained significant in the Girls' School, but less so in the Boys' School where the retarded boys had made considerable progress.

Other tests concerned with "Appreciation" were the Harmony Test (No. VII of the Tests of Musical Awareness (i) and (ii) and the Key (c) and Major/Minor (i) Tests of the Classroom Series. The results of the Harmony Test in both of the schools varied with the two playings of the tests. At the beginning of the investigation they were more significant in the Boys' School, in favour of Group I, than in the Girls' School where no real difference was apparent. At the end of the investigation the difference between the Groups was negligible, the retarded children registering much higher scores than previously.

In the Key Test (c) there was a slightly bigger difference between Groups, in favour of Group I, in the Girls' School than in the Boys' School where the result was not significant. Nor was there any significant difference between Groups I & II in the Major/Minor Test (i), although both the boys and girls of Group II appeared to do slightly better than the members of Group I.

Another essential factor in "Appreciation" is the appropriate use of "dynamics". Although it is probably impossible to test quantitatively for the awareness to the most appropriate use of dynamics, an attempt was made in Test VIII (Phrase-Structure Test) of the Tests of Musical Awareness (i) and (ii). No appreciable difference was apparent at the end of the investigation, although when the test was first given its results had been significant in the Boys' School in favour of Group I and less significant in the Girls' School, but still in favour of Group I.

A further attribute essential to musicianship - a good aural memory - was not apparent as a result of the tests.

The results of Test IV, Memory Test, of the Tests of Musical Awareness were significant in both schools in favour of the members of Group I when the tests were first given. At the end of the investigation the results of the test showed that the difference between the Girls' Groups remained as great as previously: in the Boys' School it was less marked, but it was still clear that the boys of Group I were superior.

The retarded children of both schools did less well than the members of Group I in the "Deferred Recall" Test (h) of the Classroom Tests.

A poor aural memory is an obvious drawback to a child's musical development and needs to be considered carefully when a music scheme is being drawn up for retarded children.

From all the results quoted above, it would seem that although the retarded children tended to lag slightly behind the members of Group I in the majority of the tests, they possessed to an adequate degree an awareness to the essentials of music, and a sensitivity to its texture sufficient to enable them to participate with enjoyment and appreciation in many of its activities.

Of these activities the most popular with the retarded children throughout the period of the investigation was singing. Only one of the members of Group II (a girl) was a monotone singer: the rest of them had voices of a pleasing tone quality and a normal range.

(The boys' voices began to change in quality and pitch towards the end of the investigation). Their breathiness - a feature usually noticeable in nervous and excitable children - caused inevitable faults of intonation and prevented the tone quality being as vital as that of Group I. Their apathetic attitude to life generally and to their ordinary daily speech was also apparent in their poor articulation and indistinctness of consonants; but a marked improvement was noticeable by the end of the investigation.

Their rate of learning songs was considerably slowed down by the reading or memorising of the words, and the length and type of song suitable for this Group had to be considered very carefully. The children's own choice of song almost invariably came from one of their Primary Schools and was usually associated with some big event in their life, such as May Day or a "Festival". Learning by rote was generally the rule, but the melody editions of the songs to be learnt were given to the children whenever possible. Music reading of anything but stepwise melodies with the most elementary rhythmic elements was a slow process for this Group, but following the melodies in their song books gradually enabled them to associate the sound with the melodic contours.

A piano accompaniment seemed to give confidence at first, but it was not relied upon and many traditional melodies and folk-songs were sung unaccompanied. When it was used, the children were trained to count the beats and bars of the introduction and interludes before their vocal entries. This was well within their ability by the end of the investigation.

It was impossible to do much more than unison work with the retarded children in both schools during the period of the investigation. It is far better for children to sing easy unison melodies in the performance of which they find a sense of real achievement than for them to be dragooned into learning part-songs of greater difficulty from which all the beauty has been crushed before it has had the opportunity to come to life. Delight in singing is of greater importance than perfection of performance and although mistakes must be corrected, a careful teaching of the melody by rote ensures that few of these occur. Constant interruptions are irritating and discourage the child who is trying his best.

Descants and Rounds were attempted with the girls and simple rounds proved possible with the boys, but canons and real part-singing were beyond their powers and wasted time which could be employed to far better purpose.

It would appear from observations made during the investigation that occasional solo items and group singing might profitably be encouraged. These develop both the sense of independence and the readiness to co-operate and gradually engender confidence in the child. The use of a tape-recorder helps to secure improvement in the quality of singing and in the clarity of the announcement of the song titles. In the investigator's judgment the tape-recording made of Group II's singing was much finer musically and much more convincing as a performance than that of Group I.

Members of Group II in both the Girls' and Boys' Schools appeared to enjoy conducting. As well as developing rhythmic and expressive

abilities conducting helped to train the pupils' concentration, to develop precision of movement and to encourage qualities of leadership. Successful conducting, too, demands co-operation from all members of the class.

Because of the retarded children's lack of fluency in reading words and the different choice of song required in consequence, it would appear inadvisable to combine classes for the singing lesson, unless this is intended to be a community singing period in which songs known to all present are used. But such community singing is not a substitute for the music lesson and should only be introduced for a special purpose.

When classes were combined as a time-table necessity on three occasions during the investigation it was found that the retarded children generally adopted one of two attitudes - they either remained passive and timid throughout the lesson or they made an exhibition of themselves to attract the attention of the other members of the classes. The children of Group I assumed an air of slight superiority and condescension.*

Division of the retarded classes into sections stimulated healthy rivalry and enthusiasm, and the formation of class choirs encouraged keen competition for entry and set a standard to which the rest of the class could aspire.

Throughout the investigation the singing lesson proved extremely valuable in affording an intimate contact between the investigator and the children.

* This observation would question the recommendation of the Report of the Mental Deficiency Committee (1931) that children from the special class may join in "with their fellows whenever possible, as for example, for Singing and Physical Education and Games".

The retarded children appeared to enjoy listening to music, and although their listening was not necessarily of a critical nature, they seemed to the investigator to derive great satisfaction from it.*

Far less interest was shown by them in gramophone records than in the performance of a person, whether a visiting solist or the investigator, in the classroom. They tired more quickly when listening to the gramophone and seemed to need several short pieces of music with spoken comments between them to break the concentration. Strongly rhythmic items made the greatest appeal to both girls and boys, and they were much happier with clear-cut easily understood forms than with programme music or music "telling a story". Group II in neither school showed any lively interest in the construction of the instruments to which they listened.

The introduction of any new listening music had to be made cautiously, but once it had become familiar many repetitions of it were demanded.

Background details and technical explanations distracted the children rather than helped to focus attention on the music, but such common aids to listening as the following of melodic fragments written on the blackboard, the tapping of recurrent rhythms and the recognition of repetitions of the main theme seemed to aid concentration. It was helpful when the chief melodic motives of any orchestral works

83

* Wing has pointed out that critical listening to music in general is no easy relaxation, but requires sustained and concentrated attention, and it is suggested that those who are subnormal in intelligence lack this power.

to be listened to were singable.

It was essential for the listening periods to be kept short and for a change of work to be introduced immediately any sign of fatigue or boredom occurred. An ability to notice exactly when saturation point has been reached and to know the kind of activity which will restore interest is a necessity for any teacher of retarded children.

From the limited amount of instrumental teaching done in both schools it would appear that the learning of a musical instrument is not an impossible task for retarded children, although their progress may be rather slow in the first instance and the danger of boring them with the technique of performance before any real music is created has constantly to be guarded against. It is essential that the instrument chosen should be sufficiently simple for the children to be able to produce an accurate and pleasing note from it reasonably quickly.

The girls from Group II who were learning the recorder suffered from the same breathiness in playing their instrument as in singing their songs with the resultant difficulty of maintaining good intonation. They also found some trouble in muscular co-ordination, but progress was being shown towards the end of the investigation. Provided the problems of fingering and notation placed before them at any given stage were not beyond their capacity, and that music, vocal or instrumental, was being produced while the technique of playing the recorder was being learnt, no boredom or frustration appeared. In the investigator's judgment recorder-playing can be a valuable activity

for retarded girls of the secondary modern school age, giving to them enjoyment in making music, the opportunity to improvise melodic fragments, an introduction to a new period of listening music and a pleasurable method of learning to read music.

What has been said above about the value of recorder playing is equally relevant to the piano-class activity in the Boys' School. Here the boys' ability to pick out melodic fragments at the keyboard was in advance of their music reading, and their playing from musical notation was consequently delayed. The interest which was evinced by all the retarded boys in this activity and the progress they were able to make in a comparatively short time encouraged the investigator to believe that the use of the keyboard may form a valuable approach to this Group of boys.

In the Girls' School the girls of Group II showed considerable interest in the Music and Movement sessions, and their obvious enjoyment and pertinent remarks, as well as the manner in which they began to co-operate with each other suggested that this is an activity which should occupy an important place in their education*.

The choice of music used and the length of time allotted to each particular physical activity needed careful planning for this Group, as breathlessness soon became apparent and any undue strain may have resulted in permanent damage.

* If Music and Movement activities were continued from the Infant Stage through the Primary School it is possible that the boys would also enjoy them and would feel no embarrassment in joining in them.

Singing, listening to music, the playing of simple instruments and movement to music for the girls were the chief activities in which the retarded children appeared to participate with greatest confidence and happiness.

Melody-making produced a few satisfactory little tunes from them, but they could not be written down, as any efforts at musical notation caused so many difficulties that the amount of labour and worry involved was not justified by the results. Musical dictation proved quite impossible.

No single aspect of music was concentrated on for a whole time-table period, and although each lesson was carefully planned, much switching of sections was essential in order to meet the needs of the class at various times.

The above results and observations are considered by the investigator to be of a tentative nature. As a result of the experience gained during the investigation described in the present thesis he hopes to undertake a similar but more thorough investigation of some of the problems already revealed over a longer period in the future.

Chapter XXI.

CONCLUSION.

In a section on retarded children the Handbook of Suggestions for Teachers (1948) says ".....every effort should be made to find some pursuits in which the less intelligent children can excel and to assign them responsible duties that they are able to carry out."[87]

It is the responsibility and privilege of the secondary modern school to introduce to its pupils such pursuits, to give them new and stimulating interests, and to assure them of a place in a community where the worth of each individual is recognised and his needs are satisfied.

Many retarded children enter their modern schools with an inhibiting sense of failure and frustration. At home they are not always welcome, in class their companions move ahead of them, and they leave their primary schools having failed the scholarship. They are not alone in this and it need be no barrier to their progress in non-academic directions. Their future reactions to work and life will depend considerably upon the attitude of the secondary schools to which they proceed. If they are received there as the "dregs" of the primary school and are treated as such, the process of deterioration in their outlook and character is likely to continue and the little self-respect they still retain may disappear altogether.... "The dim, half-realised sense of their inborn inferiority, an inferiority which they cannot help, but for which they are incessantly blamed, may act as a rankling grudge against the world in general or against their luckier relatives or school mates."

The concentrated preparation for the "scholarship" may have involved them in a struggle with work which in its nature is too difficult for them and a sense of isolation from the rest of the class because of their inability to progress at the same speed as their more intelligent fellows. At home, help has probably not been forthcoming, or a misguided pressure on them to "pass the scholarship" may have increased their nervous strain and further aggravated their already unstable condition. Signs of these various attitudes and conflicts were not lacking in many of the children concerned in the present investigation.

What the Report on the Primary School (1931) says about the junior retarded child applies equally to his fellow in the secondary school: "Work which has no intrinsic value in itself and merely prepares the way for more advanced studies should be excluded from the curriculum. His work in all branches of the curriculum should be directly related to the comparatively simple needs of after life."[96]

In the modern school there is no reason for introducing work which is beyond the capacity of a child, nor is there any justification for neglecting a pupil because he is a "late-starter" and backward. No external examination need direct the organisation of the curriculum, and within the limits imposed by the timetable and the staffing of the school a large variety of activities should be available to meet the diverse needs of the retarded children.

Mainwaring's description of the ideal aim of the school is

relevant to the class for retarded children ".....the school should therefore provide for the all-round physical, intellectual, emotional, social and spiritual growth of the children, showing itself in the satisfaction and development of such natural qualities as their sense of wonder, appreciation of beauty, respect for objective facts, sensitive awareness, kindliness, self-reliance and initiative.....All children should feel in a school a sense of security and of being wanted for their own sakes, so that they may venture forth into new fields of exploration and discovery. They should be given scope for service to others and find fulfilment through awareness of achievement."

The work undertaken in class and the results of the various tests given during the period of the investigation described in this thesis suggest that music is one of these "fields of exploration and discovery", an activity in which the retarded children can participate without an undue sense of failure or inferiority.

In music it is possible for the retarded pupil to start at a level nearer to his fellows than in most other subjects. The Norwood Report of 1943 states that ".....deficiencies in what is called back-ground do not or need not impede progress or stand in the way of superlative achievement in music; advantages of home atmosphere likely to help in some subjects count for less in music". Although this may be true theoretically, unfortunately in practice the lack of a musical background often does delay musical progress, since the retarded child demands encouragement above all else if his innate abilities are to be fully developed.

But the child who is frequently absent need not lose as much lee-way in practical music-making as in other subjects, for the logical sequence which is required by them for the presentation of their facts is less essential in many musical activities.

As well as providing the opportunities for the child to gain happiness, restored confidence and self-respect in school, music can be one of the most satisfying and worth-while occupations of his leisure time.

The manner in which adolescents use their leisure is of major concern to all serious educationists. This was stressed by the McNair Report of 1944 ".....the attention of the nation is now as never before being directed to the provision of opportunities for young people to spend their leisure well, and here especially music has a major contribution to make". Music-making offers to the child an interest and enjoyment which can direct his attention away from other superficial pleasures to which he may be attracted and from the even more questionable pursuits into which he may easily be led. It affords a release to his emotions and provides a measure of directing them into positive channels.

The retarded child is usually an exceptionally emotional child.* He may appear sullen and restrained on the surface, but beneath he is often bursting with a force of pent up emotion: or he may be a child whose emotional life is always lived near the surface and who is

86

* Schonell estimates thatthere are three times as many unstable children amongst the backward as amongst those making satisfactory progress.

likely to explode into fits of uncontrollable grief or rage at any moment.

Emotion is closely allied to action. The action of the retarded child can often be stimulated by touching the emotions ".....we may find that a child comes to a standstill in his work, not because of defects in his intellectual machinery, whether general or specific, but because of some shortage or leakage of musical energy and will."[9] Music provides activities and experiences well qualified to touch the emotions.

The emotions, too, influence the development of character. The Greeks were so convinced of this that they chose their music with great care for its specific effect upon the emotions and for training the character of their youths in certain desirable directions. "Is not this the reason, Glaucon, why musical training is so powerful, because rhythm and harmony find their way into the secret places of the soul, on which they mightily fasten, bearing grace in their movements and making the soul graceful of him who is rightly educated or ungraceful if ill-educated?".[58]

The misdirection of the emotions often brings about maladjustments of social relationships and may lead finally to crime itself. So much of the life of the retarded child seems to him completely purposeless that he becomes an easy victim to temptation. It has already been noticed that a large number of children who are in trouble with the police from time to time come from the ranks of the

retarded. To send retarded children from school as useful and co-operative citizens is of more value than to train them as potential scholars, or - what is more likely - as disgruntled adolescents who have been kicked about so long that they only await their opportunity to return the kicking.

Such a training in citizenship is one of the essential duties of any school. Professor Harnley lays great emphasis on it: "If we are to make the dull and backward good citizens we must train them in qualities that good citizens reveal; we must train them in the art of individual and social living. To do this we must change the emphasis from learning to living, from knowledge and skills to citizenship.....It does not greatly matter, except for a few fundamentals, whether the backward child carries away with him this or that item of knowledge or whether he has acquired this or that technical skill, but it does matter whether he has learned to work and play as an individual and as a member of society: it does matter whether he has acquired healthy ideals and enthusiasms."[86]

One of the finest pieces of training in co-operative and democratic living is given in such musical activities as the choral class and instrumental group, where each individual member contributes to the total effect of the group ensemble, and in subordinating himself to the demands of the music as interpreted through the conductor or teacher finds that his own personality becomes enriched in proportion to the degree of his surrender.

It is the investigator's belief that music not only affects

emotion and character, but that it can influence a person's whole attitude to life. Teachers in the schools concerned in this investigation said that they were always glad to teach the retarded children after a music lesson because they found them "more alert and observant". The Head Teachers commented, too, on a certain improvement in behaviour and manners, an added poise and a new zest for life in the children concerned during the period of the investigation.*

The influence of music upon the actual health of retarded children is a subject for further research. In the present investigation too many factors were involved to justify claims that the improvement in health noticed over the period in a number of children had any immediate relation to the music course.

Research is at present being undertaken in many countries into the therapeutic uses of music. There are records of the curative value of music in the Bible and other ancient literature, the Arabs had whole wards devoted to musical therapy during the Middle Ages and Dr. Jean L. Dessarts, Dean of the Faculty of Medicine in Paris, in a treatise read before the National Institute of France as early as 1803 made bold claims: "Music, by imparting to the nerves their life, which in certain maladies is suspended or choked, restores the function of vitality to vessels and tissues". Singing -practised correctly - with its emphasis on breathing is of physical value to all children.

* In the absence of a Control Group it was impossible to discover how far such improvement was due to the influence of music and how far it was the result of other factors.

Pulmonary and chest complaints as well as catarrhal troubles which are common in retarded children are rarely found amongst singers.* The physical benefit gained by retarded children from carefully supervised movement to music is obvious.

Music can only play its full part in the life of the retarded child when the teacher concerned is prepared to recognise its potential value and to provide every opportunity for it to speak freely and with the maximum appeal during the time the child is in school.

After discussing the impoverished environment of many children and noting how much of the living in it lacks planning and aims, Dr. H. Crichton Miller writes: "This, then, is the treatment of life on a basis of killing time. What school teacher can inspire a child from such a home with the idea that life is an important enterprise, that it is capable of yielding a rich reward and that it can be charged with significance instead of sapped of all meaning".[84]

This, surely, is the very duty of the school teacher who sees the child not only as he is when he enters the school, but as he could be, both during his days there and when he leaves its immediate influence. Especially is it the opportunity for the music teacher, and the more fragile the background of the child, the greater is his responsibility. Not only does the child require adequate equipment to fit him as a useful member of the community, but he needs to be inspired to make his contribution to it gladly and willingly, giving

* The investigator intends to follow up these suggestions with further research into musical therapy.

to life unstinting service, and finding in it the maximum amount of happiness.

The claims of the retarded child for recognition within this community were expressed in the editorial column of "The Parent's Voice", the journal of the National Association of Parents of Backward Children in January 1952: "Our children, though they have but a limited value as economic units are infinitely valuable to God, they have human feelings and rights in common with all other human beings. We ask for them respect and justice".

This lays at the door of the teacher a heavy responsibility which he dare not accept casually. His attitude to the child is of prime importance, whatever the materials and methods he uses. It must be one of encouragement, of praise for work well done to the limit of ability and of a strengthening of the children's determination to succeed. He must be a person with a clear sense of vocation - not necessarily the most recent comer to the school staff, or the one about to retire, as is often the case now. Professor Schonell quotes as the foremost of the qualities he would wish to find in such a teacher: ".....sympathy which does not mean sentimentality, but an ability to inspire confidence in the child so that he continues to make efforts and obtain satisfaction from his work, ingredients vital to the development of personality"[76]. His relationship to the child is that of a friend as well as a teacher, standing by to give guidance and the benefit of his own more mature experience whenever

it is needed, but watching always that he does not force the pace so that the child can develop in his own time and in his own way towards the ultimate aim of an integrated and happy personality.

In the words of Eric Gill, "No longer can we think of merely getting on in the commercial and materialistic sense. We must think of getting on in the sense of getting heavenwards. And in everything we learn and in everything we teach our pupils we must bear this fact in mind." [23]

Music is a medium through which such an ideal can be translated by those of us who bear responsibility for the welfare of retarded children into the everyday practical activities of our schools.

APPENDIX A.

The Music Teacher for Retarded Children.

It is valuable for the teacher who is to work with retarded children to be a regular member of the school staff, and to identify himself in every respect with the activities of the community which he serves. Of all the children this group most needs the sense of stability which only the day to day contacts of teacher and pupil can fully establish. In his home the child is often so accustomed to a shifting population and to the temporary nature of all his activities that he finds no purpose in planning and no advantage in being methodical. If when he comes to school the same atmosphere of drift and insecurity is felt, no solid ground remains on which he can begin to build the foundation of his future life. "A child may suffer a very considerable set-back when his parents move house and he has to change school - but it is easy to overlook similar dangers which may be inherent in the school system..... and a surprisingly smallthing can produce confusion in the mind of a dull child".

In music the need for a permanent teacher on the school staff is perhaps greater than in some other subjects, for so much of the most worthwhile music-making has to be done out of formal school hours. Gramophone clubs, voluntary music societies and the production of cantatas, operettas and other concert

items are often only possible as extra-musical activities. It is the regular member of staff, too, who has the best opportunity of directing the children's attention and interest to local music-making, by taking them to the performances of the amateur choirs and orchestras in the district, and by arranging parties to travel to neighbouring towns to hear visiting professional artists. Carol parties at Christmastide and Music Camps in the summer can be a valuable inspiration. And the music teacher who enters fully into the life of the school's games and sports often wins for music the athletic retarded children - of whom there are not a few* - in a way denied to a visiting pedagogue.

If it were practically possible it would be beneficial for the retarded children to be taught music by the person who is responsible for the remainder of his timetable. In this way it could be integrated satisfactorily into the total pattern of his school life, and when other things were proving a little dull it could be called upon to put new zest and vitality into work again.

* This is contrary to the assertion of Mary Steward who writes: "Such children (the slightly subnormal) tend to be backward not only in scholastic pursuits, but also in the non-scholastic pursuits of school life. A dull child is unlikely to excel in games, music, in art, in debates".[11] Several of the most retarded children with whom the present investigation was concerned were the schools' best athletes and swimmers.

It is desirable for the teacher of retarded children to live in thearea from which the majority of his pupils come, so that such informal contacts can easily be made and education can be related intimately to the everyday happenings of life in the home as well as in theschool.

One of the greatest drawbacks experienced by a visiting teacher who is not a regular member of the school staff, nor the teacher of the retarded children for the majority of their work, is his inability to observe the influence music may have upon the progress of the pupils in other lessons.*

There is at present little opportunity for teachers to train specifically for work with retarded children. Short Vacation Courses are available, and in some Boroughs and Counties Teachers' Classes are organised to meet the needs of those teachers who wish to concentrate on this type of specialised teaching.

Such courses are equally necessary for the person who intends to teach music to retarded children. If he has studied at a Teachers' Training College he will have been made aware

* Although several children from Group II in the Girls' School who were particularly interested in music showed an improvement in their general examination results near the end of the investigation, too many external factors over which the investigator had no direct control may have been involved to justify any significance being attached to this improvement.

of the needs of the 'backward child' but in very few cases will these needs have been related to music. If all his training period has been spent at an Institution devoted solely to the study and practice of music - as is that of many music teachers in the Modern and Grammar Schools - he is unlikely to have met the problem in any form until he enters his school, where he will have to spend a considerable amount of time in experimentation, if he is not to be overcome with frustration.

There is a need for a scheme of training for music teachers which will relate more realistically their musical knowledge to the retarded children for whom they may be responsible. This could be integrated into the work of the normal Training College Courses or provided as an extra course at one of the County's Training Colleges, Education Departments or Music Colleges. It should certainly find a place in the Teachers' Classes organised by Local Education Authorities.

APPENDIX B.

The Retarded Child and Dancing.

During each Christmas Term Form IVc of the Boys' School received dancing lessons with the parallel form from the adjoining Girls' School in preparation for a joint party at the end of the term. These lessons were observed spasmodically during the period of the experiment.

Although some slight natural embarrassment was noticed at the first "get-together" this had disappeared by the end of the lesson, and the joy of both sexes in this activity was apparent. Extra time and more lessons were eagerly requested by the boys. Their dancing and poise were certainly a delight to the eye, and it was a great satisfaction to watch boys who were "unsuccessful" in so many spheres achieving a measure of self-realisation and becoming vital personalities accepted and admired by their fellows and the girls.

It was the considered judgment of the dancing teacher - a member of the staff of the Girls' School - that the ease, fluency and grace of movement attained by this class of "C" boys and girls each year were of a quality quite equal to that of their contemporaries in the "A" and "B" streams, and that in some instances there was a sensitivity of movement not seen in other groups. The fact that the boys were able to take their places at parties and on other social occasions without fear of gawkiness or of being the "odd man out" helped to develop their

sense of self-respect. Many of the boys from these classes continued dancing lessons after they had left the school, and one of them was considered the best dancer of his area.

Not, I believe, entirely unrelated to this bodily control was the fact that all the boys in this school continued singing in a restrained manner and under supervision throughout the period when their voices were changing from boyish trebles to adult voices. The "C" children were included in all the part-singing undertaken by the year group and entered into it with as much whole-hearted enjoyment and benefit as their more generally intelligent fellows.

As this period of adolescence is the time at which the control of the movements is as difficult and unpredictable as that of the vocal organs, it may well be that the successful control of the voice, the most natural vehicle of expression can aid considerably the control of the movements of the body generally. - This is a matter for further research.

APPENDIX C.

The Need for Technical Schools with a Bias towards Music.

No place is given to music in the "scholarship" examinations at the end of the Primary School Course. As a result, the child who has musical ability, but whose deficiency in general intelligence and the basic subjects is sufficient to prevent him from proceeding to a Grammar School, is often denied the opportunity of entrance to a Teachers' Training College or of advanced musical training as a preparation for school teaching.

Few Modern Schools have music specialists sufficiently well qualified to prepare candidates for the music papers in the General Certificate of Education or other examinations usually considered essential as a preliminary to a musical career. As a result many potentially valuable music teachers are being lost at a time when there is a dearth of capable musicians who are also good teachers. It might be expected that the very difficulties which the non-Grammar School child has had to face in other subjects would make him, as a teacher, more understanding in the way he introduces music to his pupils less gifted in that particular direction.

Of great benefit to these children would be the establishment of Technical Schools with a bias towards music and a special emphasis on practical music-making, from which entry to Teachers' Training Colleges and the Teaching Departments of Musical Institutions would be possible.

Support for this idea was given by Dr. H. Wing in a letter to the "Times Educational Supplement" of February 13th, 1953: ".....It is not suggested that music should form the major part of the curriculum of such a school, but that like the junior art school, opportunities for children who have exceptional gifts in this respect should exist, and that this subject should be used as a stimulus in studying other subjects, such as history, geography and science. Music has these advantages over art that it is the more likely to be carried forward as a leisure time pursuit in the adult, and that it can be tested for at the age at which selection for the secondary school is usually made.....Further, it is commonly known that there is a shortage of suitable applicants to training colleges who can offer music as a main subject, and there is said to be a shortage of suitably qualified music teachers in the primary and secondary modern schools. On the other hand, there is said to be a surplus of art teachers. May not these two factors be linked with the relative facilities provided for the development of junior art as compared with the development of junior music?".

APPENDIX D.

The Use of Percussion Instruments as an Aid to Listening.

The attraction of a large number of retarded girls to movement when music was being played, the amount of quiet tapping done during listening periods, and the interest of both girls and boys in Group II in following simple scores and melodies on the blackboard, suggested that the use of percussion instruments may be valuable as an aid to listening for this type of child.

Successful work with percussion bands has been achieved by many teachers of backward children in Primary Schools, and Hetta Loewy [39] and Kennedy-Fraser [28] have given some account of their experimentation in this field. But although the percussion band as a performing unit may appeal to young children - its educational worth is a matter of opinion - it is not entirely suitable in its present form as a medium of expression for the retarded children of a Modern School.

The percussion instruments are of far greater value as an aid to listening. The following of a simple music score and the counting of bars in order to make correct instrumental entries demands concentration and precision of action. During the "counting" period much music is absorbed and to greater purpose than if it had been accepted passively. When a

cymbal clash has to be made on the fiftieth bar of a score there is little fear of the previous forty-nine bars passing merely as "background".

The qualities of concentration and precision involved in this activity need particular training in the retarded child.* The use of percussion instruments to further this end as well as to encourage intelligent listening and prepare for orchestral playing is a field for further research.

* The "bell experiment" was used by the Headmistress of the Girls' School for this purpose.

APPENDIX E.

A 'Music Club' for Retarded Children.

Although an attempt was made to maintain an informal atmosphere during the lessons with the retarded children, class organisation and discipline were essential, and individual experimentation with music-making of various sorts proved impossible during school hours.

This was a severe limitation, for it is only when a child is left alone with music for any length of time that music's real and undirected influence can be truly ascertained. Nor should music, which for the vast majority of people remains a pursuit for leisure hours, always be associated in the child's mind with the classroom and formal instruction.

An interesting experiment would be the formation of an out-of-school music club, organised on the lines of other Youth Clubs and meeting in a building which had no connection with the School. The club building would be open for a pre-arranged time every evening, at the week-end and during holidays. In it pianos, various orchestral instruments, magazines, easy music books and scores and a radio set and gramophone would be housed. A reading room, common room and canteen would provide facilities for quietness, discussion and refreshment.

To this club the children could escape to practise the instruments, of their own choice, to try other instruments,

and to listen to records and radio programmes uninterrupted by the requests and demands of the family.

The club should be organised by the members themselves, but adults would be present to offer help when it was required, to supervise practices, to guide the experimental activities of the children, and to follow up (surreptitiously!) work which had already been introduced during the more formal school lessons. Never should the adults force upon the club-members their own judgments, preferences and conceptions, and the main responsibility for the drawing up of a programme of communal activities should fall upon the children themselves.

In this way music would become as real a leisure pursuit as table-tennis and ballroom dancing, and its influence would be felt directly by the child, unhindered by any barriers of nervousness or repression.

APPENDIX F.

The Children's Background of Listening.

Although one may be disturbed by the limited musical background of the children of both Groups I and II, an examination of the weekly B.B.C. programmes during the period of this investigation makes one realise forcibly how little one can recommend for children's listening between the hours of 4.30 p.m. and 9.30 p.m. Apart from a few features of the Home and Light Programmes such as "Quarter-Hour Celebrity", "On Wings of Song", "Sounding Brass and Voices", "Children's Hour", "Music to Remember", "It's Choir Night", "Children Singing" and "Brass Band Parade",* most of the evening's music is reserved for the Third Programme, and is of such a specialised nature that it can have little appeal for, or lasting musical influence on, many of the Modern School population. Several orchestral works which would be easy for children to absorb after careful preparation and selection are relayed during the day. Some Saturday mornings offer a slightly larger variety, and one new programme, "Saturday Night on the Light", was just beginning to attract a small regular listening audience of children who were not at the cinema when it was taken off the air.

The dearth of material was first realised by the investigator when he was selecting programmes to underline in the schools' copies of the "Radio Times" as an attempt to encourage the children to listen to carefully selected programmes at home.

* These programmes were taken from the North of England edition of the "Radio Times" during the period between the beginning of the investigation and the completion of the Thesis. At no time could more than five of them be heard during one week.

It would seem that an equivalent of "Listen with Mother" is required for adolescents - a regular short programme based on songs which the children have learnt in school and which would be broadcast by popular but worthy artistes who may have earned the children's esteem for different reasons. The songs should be supplied with a colourful orchestration and accompanied by a small instrumental group who would also contribute short orchestral works with attractive rhythms and melodies easy of comprehension. This would help to integrate music of a better quality more intimately with the life of the child than is sometimes possible in the formal routine of a school. Because it came out of the same loudspeaker as their favourite 'hits' and was sung by the same people who sang those, it would immediately assume reflected glory and once absorbed (if the process had been sufficiently regular and bold) would remain as part of their heritage, while the more shoddy ear-ticklings disappeared.

APPENDIX G.

Tests of Musical Awareness (1)

Frequency Distributions.

Test I - Pitch Discrimination Test.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8	9	4	8	14	5
7	5	6	7	15	5
6	17	5	6	1	7
5		10	5		3
4		3	4	2	2
3		1	3		7
2		1	2		1
1	1		1		
	32	30		32	30

Test II - Melody Test.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8			8	2	
7	1		7	2	
6	5	1	6	2	
5	1	1	5	5	4
4	5	10	4	5	1
3	6	11	3	9	3
2	10	2	2	7	8
1	4	4	1		8
0		1	0		1
	32	30		32	30

Test III - Rhythm Test.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8		1	8		
7	3	8	7	2	1
6	5	7	6	2	3
5	8	3	5	8	11
4	7	7	4	4	7
3	5	1	3	10	5
2	4	2	2	4	2
1		1	1	1	1
0			0	1	
	32	30		32	30

Test IV - Memory Test

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II.
8	9	1	8	23	
7	9	5	7	8	1
6	8	10	6	1	4
5	4	7	5		2
4	1	3	4		5
3	1	1	3		4
2		1	2		5
1		1	1		7
0		1	0		2
	32	30		32	30

Test V - Two-Melody (Counterpoint)Test.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8			8	1	
7	1	1	7	2	2
6	5	4	6	9	4
5	7	11	5	6	4
4	8	6	4	10	6
3	6	1	3	2	10
2	2	5	2	2	1
1		2	1		1
0	3		0		2
	32	30		32	30

Test VI - Timbre Test

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8	2	1	8	1	
7	8		7	1	3
6	9	6	6	9	
5	4	7	5	11	3
4	2	6	4	7	3
3	7	9	3	2	5
2			2		3
1		1	1	1	4
0			0		9
	32	30		32	30

Test VII - Harmony Test.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8	2	1	8	15	3
7	1	4	7	9	7
6	4	4	6	5	6
5	11	10	5	2	8
4	9	5	4		4
3	4	4	3	1	2
2	1	2	2		
	32	30		32	30

Test VIII - Phrase Structure Test.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8	2	1	8		1
7	12	3	7	9	3
6	3	4	6	6	11
5	7	2	5	8	3
4	6	11	4	5	6
3	2	6	3	3	5
2			2		
1		2	1	1	1
0		1	0		
	32	30		32	30

APPENDIX H.

Tests of Musical Awareness (II)

Frequency Distributions.

Test I. - Pitch Discrimination Test.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8	18	4	8	10	2
7	11	11	7	14	8
6	2	5	6	7	6
5	1	4	5	1	5
4		3	4		4
3		1	3		2
2			2		3
1		1	1		
0		1	0		
	32	30		32	30

Test II. - Melody Test.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8		3	8	7	
7	4		7	2	6
6	2	1	6	2	2
5	6	5	5	5	4
4	9	4	4	7	5
3	6	8	3	4	9
2	1	6	2	4	4
1	4	1	1	1	
0		2	0		
	32	30		32	30

Test III.- Rhythm Test.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8	9	9	8	6	2
7	16	10	7	3	2
6	3	6	6	6	9
5	2	3	5	11	7
4	2	1	4	2	6
3			3	1	4
2		1	2	2	
1			1	1	
	32	30		32	30

Test IV - Memory Test.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8	17	7	8	19	6
7	9	5	7	6	9
6	2	7	6	3	6
5	2	1	5	1	6
4	1	2	4	1	2
3		1	3	1	1
2	1	2	2		
1		5	1	1	
	32	30		32	30

Test V - Two-Melody (Counterpoint Test).

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8	3	3	8	4	1
7	9	4	7	6	5
6	9	8	6	6	19
5	4	5	5	4	1
4	2	9	4	9	1
3	1	1	3	2	1
2	2		2	1	1
1	1		1		1
0	1		0		
	32	30		32	30

Test VI - Timbre Test.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8	14	1	8	4	4
7	9	4	7	6	11
6	3	7	6	6	8
5	4	7	5	4	1
4	2	4	4	9	6
3		3	3	2	
2		3	2	1	
1		1	1		
	32	30		32	30

Test VII - Harmony Test.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8	11	13	8	14	14
7	8	5	7	5	9
6	6	3	6	5	3
5	3	3	5	3	4
4	3	3	4	5	
3		1	3		
2	1	2	2		
	32	30		32	30

Test VIII - Phrase Structure Test.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8	6	8	8	5	3
7	8	11	7	11	10
6	8	4	6	9	5
5	4	5	5	4	6
4	5		4	3	4
3		1	3		2
2	1		2		
1			1		
0		1	0		
	32	30		32	30

APPENDIX I.

Other Tests used during the Investigation.

Frequency Distributions.

Test (a) - Pitch Intervals and Rhythmic Groupings.

(i) Pitch

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8		1	8	15	2
7	4	1	7	8	1
6	8	2	6	4	
5	3		5	3	2
4	8		4	2	6
3		3	3		4
2	7	10	2		7
1	2	8	1		4
0		5	0		4
	32	30		32	30

(ii) Rhythm

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8	3	2	8	12	
7	4		7	10	3
6	4	1	6	4	2
5	5	1	5	4	4
4	6	3	4		3
3	3	4	3	1	5
2	4	5	2	1	2
1	3	2	1		2
0		12	0		5
	32	30		32	26

Test (b) - Simultaneous Tunes Test.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
10			10		
9			9		
8		2	8		
7		4	7	9	
6	1	8	6	6	
5	6	2	5	11	
4	16	4	4	5	4
3	7	6	3	1	17
2	2	3	2		5
1		1	1		2
0			0		
	32	30		32	28

Test (c) - Key.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
10			10		
9	1		9	1	3
8	5	3	8	2	6
7	9	10	7	9	6
6	8	4	6	7	5
5	6	6	5	10	9
4	3	5	4	2	1
3		1	3		
2		1	2	1	
1			1		
	32	30		32	30

Test (d) - The Number of Beats in a Bar.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
20			20		
19	2	2	19	1	
18	2	1	18	1	
17	8	5	17	3	
16	6	5	16	3	2
15	5		15	5	6
14	2	9	14	7	5
13	1	2	13	6	5
12	5	5	12	5	4
11	1		11		3
10		1	10		1
9			9		3
8			8		
7			7	1	
6			6		
5			5		1
	32	30		32	30

Test (e) - Form

No written test given.

Test (f) - Phrase-Lengths and the Number of Phrases in Melodies.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
8			8		1
7	8	1	7		2
6	4	1	6	8	10
5	7	10	5	11	3
4	9	9	4	12	6
3	4	7	3	1	1
2		2	2		2
1			1		2
	32	30		32	27

Test (g) - Cadences.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
10	1	3	10	9	4
9	6	5	9	10	1
8	6	8	8	8	8
7	10	2	7	2	6
6	5	9	6	1	6
5	4	2	5	2	3
4		1	4		2
3			3		
2			2		
	32	30		32	30

Test (h) - Deferred Recall.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group II
10			10		
9			9		
8			8	2	
7			7	2	
6	3	1	6	3	
5	10	6	5	10	1
4	11	3	4	10	5
3	5	10	3	3	10
2	3	7	2	2	7
1		1	1		5
0		2	0		1
	32	30		32	30

Test (i) - The Major and Minor Modes.

Girls			Boys		
Score	Group I	Group II	Score	Group I	Group I.
20			20		1
19			19	4	5
18	1	2	18	4	1
17	3	3	17	6	5
16	1	4	16	6	10
15	3	4	15	7	5
14	5	7	14	2	2
13	1	7	13		1
12	3	1	12	2	
11	2	1	11	1	
10	3	1	10		
9	4		9		
8	1		8		
7	1		7		
6	1		6		
5			5		
4	2		4		
3	1		3		
	32	30		32	30

BIBLIOGRAPHY.

1. Antcliffe, H. & Rothery, G. C.)	A Study of the Nature of Music and the Power of Music	Waverley Book Co.
2. Barons, P. A.	Backwardness in School	Blackie & Son
3. Blom, E.	Everyman's Dictionary of Music	Dent 1946
4. Bowley, A.	The Problem of Family Life	Livingstone, Edinburgh, 1946
5. Bowley, A.	The Psychology of the Unwanted Child	Livingstone, Edinburgh 1947
6. Bridie, M. F.	An Introduction to Special Schbol Work	Arnold 1917
7. Buck, P.C.	Psychology for Musicians	Oxford Univ. Press 1944
8. Bulley, M.	Aesthetic Judgments of Children	Brit. J. Educ. Psychol. IV (1934), 162
9. Burt, C.	The Backward Child	University of London Press 1937
10. Burt, C.	The Young Delinquent	University of London Press 1945
11. Burt, C.	The Subnormal Mind	University of London Press 1935
12. Cameron, H.C.	The Nervous Child	Oxford University Press 1919
13. Cameron, H. C.	The Nervous Child at School	Oxford University Press 1935
14. Curwen, J.	How to Read Music and Understand it.	J. Curwen & Sons, Ltd. 1881
15. Dalcroze, E. Jacques-	Rhythm, Music and Education	Chatto & Windus 1921
16. Davies, W.	The Pursuit of Music	Nelson 1935
17. Descoeudres, A.	The Education of Mentally Defective Children	Harrap 1928

18. Dewar, N.	A Comparison of Tests of Artistic Appreciation	Brit. J. Educ. Psychol. VIII (1938), 29
19. Driver, A.	Music & Movement	Oxford University Press 1936
20. Duncan, J.	The Education of the Ordinary Child	Nelson 1942
21. Fenby, E.	Delius, as I Knew Him	Quality Press 1936
22. Frampton, M.E. & Rowell, H. G.)	Education of the Handicapped	Harrap 1939
23. Gill, E.	Last Essays	Faber & Faber
24. Gittins, J.	Approved School Boys	H.M.S.O. 1952
25. Hale, N. V.	Education for Music	Oxford University Press 1947
26. Hamley, H. R.	The Testing of Intelligence	University of London Institute of Education, Evan Bros. 1916
27. Heck, A. O.	Education of Exceptional Children	McGraw-Hill Book Club 1940
28. Heinlein, C. P.	An experimental Study of the Seashore Consonance Test	J. Exper. Psychol. VIII (1925), 408
29. Heinlein, C. P.	Critique of the Seashore Consonance Test	Psychol. Rev. XXXVI (1929), 524
30. Hendrick -Duchaine	La Musique et La Therapeutique	Paper Read to the International Conference on Musical Education, Brussels 1953.
31. Hevner, K.	A Study of Tests for the Appreciation of Music	J. Appl. Psychol. XV (1931), 575
32. Highfield, M.E.	The Education of Backward Children	Harrap 1939
33. Hollander, B.	Abnormal Children	Kegan Paul 1916
34. Howes, F.	Man, Mind and Music	Secker & Warburg 1948
35. Jacks, M. L.	Modern Trends in Education	Andrew Melrose 1950

36. Jeans, J.	Science and Music	Cambridge Univ. Press 1937
37. Jenkinson, A.J.	What do Boys and Girls Read?	Methuen 1946
38. Kennedy-Fraser, D.	Education of the Backward Child	University of London Press 1932
39. Loewy, H.	The Retarded Child	Staples Press 1949
40. Lowery, H.	The Background of Music	Hutchinsons' Univ. Library 1952
41. Lowery, J.	Cadence & Phrase Tests of Musical Talent	Brit. J. Psychol. XVII (1926), III
42. Lowery, J.	Musical Memory	Brit. J. Psychol. XIX (1929), 397
43. Lowery, J.	Some New Tests Designed for Use in the Estimation of Musical Capacity	Proc: Manchester Lit. & Phil. Soc: LXXVI 1932 No. 6.
44. Macpherson, S.	The Musical Education of the Child	J. Williams 1915
45. Mainwaring, J.	The Assessment of Musical Ability	Brit. J. Educ. Psychol. XVII (1947), 83
46. Mainwaring, J.	The Meaning of Musicianship	Brit. J. Educ. Psychol II (1941)
47. Mainwaring, J.	Experiments on the Analysis of Cognitive Processes involved in Musical Ability	Brit. J. Educ. Psychol. I (1931), 182
48. Mainwaring, J.	Teaching Music in Schools	Paxton 1951
49. Morris, B.	The Aesthetic Process	Evanston Northwestern University 1943
50. Morris, R.	The Quality of Learning	Methuen 1951
51. Mullins, C.	Crime and Psychology	Methuen 1943

52. Mursell, J. L.	The Psychology of Music	New York, Norton & Co. 1937
53. Myers, C.S.	The Psychology of Musical Appreciation	Proc: Manchester Lit. & Phil.Society LXXVII 1932-3
54. Neill, A. S.	The Problem Family	Herbert Jenkins
55. Newacheck, V.	Music and the Slow Learner	Music Educators' Journal M.E.N.C. Nov.- Dec. 1953 Chicago
56. Owens & Grimm	A Note Regarding Exceptional Musical Ability in a Low-Grade Imbecile	Journal of Educ. Psychol. XXXII Nov. 1941
57. Parkyn, G. W.	Children of High Intelligence	New Zealand Council for Educational Research 1948
58. Plato	The Republic	Macmillan & Co. 1943
59. Pole, W.	The Philosophy of Music	Kegan Paul 1924
60. Pollock, T.	Singing Disabilities in School Children	Unpublished M.Ed. Thesis Univ. of Durham Library (1950)
61. Revesz, G.	The Psychology of a Musical Prodigy	New York, Harcourt, Brace & Co., 1925
62. Robertson, R.K.	The Treatment of the Backward Child	Methuen 1950
63. Schmideberg, M.	Children in Need	Allen & Unwin 1948
64. Scholes, P.	Music, the Child and the Masterpiece	Oxford University Press 1935
65. Schonell, F. J.	Backwardness in the Basic Subjects	Oliver & Boyd, 1942
66. Seashore, C.	The Psychology of Music	New York: McGraw-Hill Book Co. 1938
67. Segal, C. S.	Backward Children in the Making	F. Muller Ltd. 1949
68. Segal, C. S.	Penn'orth of Chips	V. Gollancz 1939
69. Snell, R.	Music & Retarded Children	Music in Education (Novello) May - June 1952

70.	Spearman, C.	The Abilities of Man, their Nature and Measurement.	Macmillan, 1927
71.	Steward, M.	The Education of the Backward Child	Research Series No. 57 Fabian Society
72.	Taylor, E.	Experiment with a Backward Class	Methuen 1945
73.	Valentine, C. W.	The Difficult Child	Methuen 1940
74.	Wallace, W.	The Musical Faculty	Macmillan 1914
75.	Wallace Wallin, J. E.	Problems of Subnormality	World Book Co., New York, 1949
76.	Wallace Wallin, J. E.	Children with Mental and Physical Handicaps	Staples 1949
77.	Wheeler, L.R. & Viola D.	The Intelligence of Music Students	The J. of Educ. Psychol: Vol. XLII No. 4, April 1951
78.	Wheeler, O.	Youth	University of London Press 1929
79.	Wheeler, O.	Creative Education and the Future	University of London Press 1936
80.	White, E. G.	Sinus Tone Production	Dent 1938
81.	Williams, D.D.) Winter, L.) Wood, J.M.)	Tests of Literary Appreciation	Brit. J. Educ. Psychol. VIII (1938) 265
82.	Wills, D.	The Barns Experiment	Allen and Unwin 1945
83.	Wing, H.	Tests of Musical Ability and Appreciation	Brit. J. Psychol. Monograph Supplement XXVII Cambridge University Press 1948
84.	Advances in Understanding the Child		Compiled by the Home & School Council of Great Britain, 1935
85.	Education of Backward Children		H.M.S.O. 1937
86.	Education of Backward Children		University of London Institute of Education, Evan Bros. 1936
87.	Handbook of Suggestions for Teachers		H.M.S.O. 1948
88.	Handicapped Pupils and Medical Service Regulations		Circular No. 41: H.M.S.O. 1945

89.	Music and the Community	Cambridge University Press 1933
90.	Music in Secondary Schools	Scottish Education Department H.M.S.O. 1952
91.	Music with Backward Boys	Music in Education (Novello) Nov.-Dec. 1953
92.	Qualifications of Teachers in Special Schools	Circular No. 66: H.M.S.O. 1945 Addendum 1949
93.	Reading Ability	Pamphlet No. 18 H.M.S.O. 1950
94.	Recent Developments in School Music	Pamphlet No. 95 H.M.S.O. 1933
95.	Report of an Investigation of Backward Children in Birmingham	City of Birmingham Stationery Department 1920
96.	Report of the Consultative Committee on the Primary School	H.M.S.O. 1931
97.	Report of the Mental Deficiency Committee	H.M.S.O. 1931
98.	Recherches sur les Dispositions Musicales de L'Enfant Debile	Pamphlet presented at the International Conference on Musical Education, Brussels 1953
99.	Special Educational Treatment	Pamphlet No. 5 H.M.S.O. 1946
100.	Story of a School	H.M.S.O. 1949
101.	The Fountain	The Monthly Bulletin of the Fountain Hospital Group
102.	The Neglected Child and His Family	Oxford University Press
103.	The Parents' Voice	Journal of the National Association of Parents of Backward Children
104.	The Trend of Scottish Intelligence	University of London Press 1949.