"The acceptance of a national policy for physical education in Scotland, 1872-1908".

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CONTENTS

		Page
Acknowledgements		
Introduction		i - xiv
Chapter 1.	Drill and discipline	1
Chapter 2.	Military training and drill	31
Chapter 3.	Over-pressure, Swedish and German gymnastics	47
Chapter 4.	Private schools and physical education	71
Chapter 5.	Official investigations	86
Chapter 6.	The acceptance of physical education	109
Chapter 7.	Training for physical education	130
Chapter 8.	The effectiveness of physical education.	155
	Conclusions	175
Appendix 1.	An assessment of George Cruden's system of physical education	178
Appendix 2.	Illustrations of Thomas Chesterton's system of physical education	185
Appendix 3.	An assessment of the effects of some of the main Swedish gymnastic exercises.	192
Appendix 4.	Games in Edinburgh Board Schools	197
Appendix 5.	Copies of Diplomas awarded to James Forbes (1908) and Donald McCuaig (1911)	201
Appendix 6.	Dr. W. Leslie MacKenzie's Views on Physical Education	205
Bibliography		212

Page

Table 1.	Number of inspected schools offering drill, 1874-1884	9
Table 2.	Edinburgh School Board. Number of children in the Upper Standards receiving instruction from visiting instructors	19
Table 3.	Courses organised by School Boards and County Councils under Article 91(a), November 1899-March 1905	135
Table 4.	Courses on Drill offered under Article 91(a), November 1899-March 1905	136
Table 5.	Location of courses in Drill run under Article 91(a), November 1899-March 1905	136
Table 6.	Number of teachers receiving certificates for successful completion of in-service courses in physical training, 1899-1911	137
Table 7.	Timetable for senior students (men and women) 1911-12 at Dunfermline College of Hygiene and Physical Training	151
Table 8.	Number of students entering training and graduating from Dunfermline College, 1905-20	154
Table 9.	Content of various text-books on drill and gymnastics published between 1886 and 1891	180
Table 10.	Comparison of Parallel Bars exercises in Cruden (1889) and McLaren (1869)	183
Table 11.	Comparison of the Height and Weight of British, American Aberdeen and Edinburgh School Children.	209

Bibliography

Abbreviations

The following abbreviations are used throughout:

E.I.S.	Educational Institute of Scotland
H.M.I.	Her Majesty's Inspector
N.U.E.T.	National Union of Elementary School Teachers
R.C.C.E.	Annual report of the Committee of Council on Education
R.C.P.T.	Royal Commission on Physical Training (Scotland)
S.E.D.	Scottish Education Department

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INTRODUCTION

This study considers the origins of physical education as a subject in State Schools in Scotland, and relates its growth to wider social issues. It suggests that between the Education Acts of 1872 and 1908, physical education developed as a response to particular problems in schools and society rather than as an intrinsic part of a Platonic view of education stressing the unity of body and mind. The body was regarded separately from the mind and the main function of physical education, defined in a variety of different ways, was to try to ensure that children were fit to profit from the academic instruction offered in Scottish schools. The acceptance of physical education rested on the convergence of a number of different steams of thought. Starting from different premises, with different objectives, and often with different views on the form of physical education which was desirable, all streams helped to some degree to move official and public opinion towards the acceptance of physical education in the schools. Three streams can be identified, though they overlap and do not exclude others: the advocacy of drill to improve discipline; of Swedish or German gymnastics to cure health disorders; of drill and gymnastics to improve military potential.

The Education Act of 1872 introduced a system of compulsory State education, and control at local level was vested in elected School Boards, but the Act did not require the Boards to provide for the physical welfare of school children. However the Schools (Scotland) Code, 1873, did stipulate that "attendance of boys at military drill under a competent instructor, for not more than two hours a week, and 40 hours in the year, may, in a day school

be counted as school attendance". (1) Only 19 out of nearly 2400 inspected schools were reported as offering drill in 1874 and growth over the next ten years was slow. By 1884, less than ten per cent of inspected schools were offering drill. (2) In some areas, noticeably Glasgow and Govan, nearly all the schools practised drill, under the supervision of the janitor, and in these cases it was claimed that discipline was improved. (3) This was the main justification for the introduction of drill, which was the forerunner of physical education.

It is not surprising that discipline was a problem for teachers in the situation following the passage of the 1872 Education Act. The Argyll Commission produced a series of Reports between 1864 and 1868 covering most aspects of education in Scotland. They showed that there were considerable discrepancies in the amount and quality of accommodation for elementary education (4), and the new School Boards were forced to embark on a major school-building programme. Until the new schools were available, the existing premises, often poorly ventilated and lacking in basic sanitation, had to be used. Teachers were expected to take classes of up to 100 in which there was a wide range of age and ability, and the supply of text-books and other equipment was severely limited. Many parents rejected the idea of sending their children to school at the age of 5 and others resented having to lose the services of their children as wage earners, while children

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1. R.C.C.E., 1873-74. BPP, 1874, XX Scotch Code (1873).
2. R.C.C.E., 1884-85. BPP, 1884-85, XXVI 132, table 1.
3. R.C.C.E., 1877-78. BPP, 1878, XXXl, 191.
4. See chapter 1.

themselves, unaccustomed to regular school attendance, found the hours long and the pressure of study irksome. Vagrant children, frequently verminous, diseased, and disorderly, created another kind of problem. Since school grants were based on the number in attendance and achievements in the three R's, teachers were under considerable pressure from the School Boards to produced results, however unwilling the children might be. This required order in the classroom, and it was reasoned that obedience could be taught separately in the playground and transferred into the classroom. Since it appeared that drill had been used successfully in the Army to achieve discipline, many School Boards recruited ex-soldiers as janitors or drill instructors, and introduced playground drill.

Visiting Inspectors began to comment in the mid 1870's on the successful use of drill to solve problems of discipline, and in due course headmasters also made reference to it in their annual reports. A typical comment from a headmaster of an Edinburgh school was that drill "did much in securing order and maintaining discipline in School and Playground". (5) Not surprisingly, instruction in drill was soon introduced to the teacher training colleges, and by 1885 it was being offered in all of them. Some School Boards encouraged their own teachers to introduce drill as part of the curriculum. (6)

Claims that physical education could be used as a remedy for alleged health disorders were made from about 1880 onwards. The National Union of Elementary Teachers in England led a campaign for a reform of the system of relating school grants to examination results, on the grounds that many children were suffering a break-down in health due to over-pressure of school work. 'Over-pressure'

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5. Edinburgh School Board. Minutes, May, 1885.

6. Glasgow School Board. Triennial Report. 1882-85, 15.

was discussed at two major national conferences in 1884 and 1885; it provided a topic for numerous articles in journals; and the Government produced a Report on the subject. (7) One of the recommendations for relieving the pressure of study was physical education, and the debate on 'over-pressure' brought to the surface a conflict between advocates of Swedish gymnastics and a system deriving from German gymnastics. The former was based on free-standing exercises aimed at harmonious all-round bodily development and the latter concentrated on skills performed on gymnastic apparatus. Neither system was adopted widely by School Boards in Scotland or England, but the debate opened the way for the introduction of physical training in schools. In Scotland this was not clearly linked with health, but was added on to the existing system of drill. An Aberdeen lawyer, George Cruden, published a text book and opened a Physical Training College which was the focal point for development until the end of the century. Although he was an enthusiastic performer on German apparatus, his system of physical training for children under the age of 12 made little use of apparatus, and consisted mainly of exercises for the arms, legs and trunk. One of Cruden's most important contributions was in arranging courses for teachers. He claimed to have trained over 3,000 teachers between 1889 and 1902 (8) and many of the instructors employed in the training colleges had also been trained by him. The 'over-pressure' debate revealed that many children found the regime of school-work intolerable, and there was evidence of a considerable

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7. See chapter 3,

8. R.C.P.T. (1903) 11, 448, para. 10492.

incidence of ill-health among school children. Although no positive measures were taken at that point, there was no opposition to the view that physical education was a likely solution to the problem of health disorders arising from 'over-pressure'.

Over-pressure was not confined to elementary schools. The Argyll Commission considered that in comparison with English schools, pupils in secondary schools in Scotland were clearly over-worked. The average number of hours, 1,980 per annum in a day school in Scotland was excessive when compared with 804 hours at Eton, and 1,110 hours at Rugby. (9) The boarding schools went some way towards solving this problem by extending the school day and making better provision for physical education, but the Commission was critical of the 'great deficiency' in the attention paid to physical education in day schools. (10) It appeared that the boarding schools met their responsibilities for safe-guarding the health of their pupils, (11) and one headmaster, H.H. Almond of Loretto, turned this concern for health into a guiding educational aim. At Loretto,

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9. Royal Commission Education (Scotland) (Argyll Commission) Third Report. Burgh and Middle Class Schools. 1868 BPP, 1867-68, XXIX. Appendix. Report by the Assistant Commissioners, Thomas Harvey and A.C. Sellar, 87.

10. ibid, 88.
"The attention paid to physical education and the means of recreation provided for the scholars is the natural pendant of the subject of school hours. In both these points there is great deficiency in the Scottish day schools".

11. ibid, 177.
"Their (games) legitimate use is to promote the health of the boys, to give them an interest in what they are doing while gaining health and vigour, to counteract the tendency to over-study, and to remove all pretence for the lounging and listlessness of indolent boys".

character and physique were higher priorities than intellect, and the 'laws of health' were of paramount importance. Diet, sleep and a minimum of two hours vigorous exercise in the open air were laid down as the basis of a healthy existence. This regime continued even in extreme weather conditions, but on the other hand the time-table was frequently disrupted to take advantage of good weather. Every boy was measured regularly by the school doctor, and any deviation was followed up to ensure against illness or ill-health. In cases of weakness or over-strain boys were taken to the head-master's cottage at Loch Inver to recuperate. Games were also used to promote health but in Almond's view, their main value lay in fostering courage and loyalty, and in sublimating excess energy and high spirits. Although initially he was regarded as a crank, the other boarding schools gradually adopted his system of physical education. By 1900 all the main boarding schools, and the leading day schools made provision for physical education in the time-table and pupils were subjected to regular medical examination.

Drill had been advocated as a remedy for indiscipline and various forms of exercise had been proposed as a solution for over-pressure of academic work. Another, and distinct ground of support for physical education, and particularly for drill, came from those who envisaged it as a means of improving military potential. General E.F. Chapman, Commander of the Army in Scotland, waged a brief but unsuccessful campaign in 1899 to persuade School Boards to introduce military training in Scottish schools. Although his offers of assistance were rejected both by the School Boards and by the S.E.D., Chapman's ideas impressed Sir Henry Craik, the Secretary of the S.E.D., and within a year a Department circular on physical education was published. (12) The circular informed School Boards that

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12. R.C.C.E., 1899-1900, BPP, 1900, XXIV, Circular 279, "Physical Exercises in Schools".

unless they extended the provision for military drill, the school grant might be reduced. This was a very powerful threat, but Craik's own staff and some of the larger School Boards opposed the notion of military training.

It is understandable that physical education could have been seen as an answer to the military problems Britain was facing at the turn of the century. The Army had suffered some major set-backs in the Boer War, and the military threat of other world powers, such as Germany, was growing. An imperialist nation needed a powerful Army, and the schools might have provided a breeding ground for future recruits, particularly if Cadet Corps had proved more popular. However Britain faced another, more serious problem, which was highlighted during the War in South Africa. The Inspector General for Recruiting, Sir J.F.M. Maurice, reported in 1902, (13) that only two out of every five men who offered themselves for military service during the Boer War could meet the physical entrance standards, and he suggested that the nation was in decline. The implication of his statistics was that the physique of adult British males was gradually deteriorating, and unless measures were taken as a matter of urgency this problem would pose a threat to Britain's position as a leading military power. Within a month of the appearance of Maurice's article, Lord Balfour, Secretary of State for Scotland, gained Cabinet approval for the appointment of a Royal Commission on Physical Training. (14)

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13. General Sir J.F.M. Maurice (pseudonym Miles) "Where to Get Men" Contemporary Review, LXXXI, January 1902, 78-86.

14. S.R.O., ED 7/1/23. Lord Balfour of Burleigh. "Cadet Corps and Drill in Schools". Cabinet Memorandum, 5th March 1902.

Of the three streams of advocacy of physical education identified, the second, that if helped remove health disorders, was most convincing to contemporaries. It rested on the validity of its claim that physical activity improved health. The attractiveness of the argument to contemporaries is clear. By the time that school health was accepted as part of the responsibilities of School Boards, the incidence of disease and deformities was so great that cure was a higher priority than prevention. Many of these health disorders, such as teeth decay, skin and hair conditions, and poor eye-sight, were unrelated to lack of exercise. The British Medical Association concluded correctly that the first priority was to improve children's diet by introducing school meals. (15) Some of the School Boards set up school clinics, in advance of legislation, for dental and eye treatment. But part of the worry expressed in the debate about physical deterioration was that successive generations of adult British males appeared to be becoming progressively smaller and lighter. Although the real reasons were almost certainly the poor quality of food and over-crowded home backgrounds of city-dwellers, it was frequently suggested that exercise would improve growth. (16) This became the key role for the subject in schools; although curing postural deformities was also frequently quoted as a main aim of physical education. In an important S.E.D. memorandum published in 1907, the following remarks appear:

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15. "The Food Factor in Education", British Medical Journal, 22 August 1903.

16. W.L. MacKenzie, The Medical Inspection of School Children. (London, 1904), 204.

"The more recent systems of physical training have not only taken account of growth, but they have made it their cardinal principle"

"...the exercises may be adapted to the improvement of the child's defects, the counteracting of deformities due to growth or to disease, and sometimes to indirect cure of the diseases themselves" (17)

An increase in weight does result from an increase in the size of muscles, but exercise cannot alter a person's height. Severe malnutrition may stunt growth, and improved diet can bring a child back on to the growth curve. It used to be thought that a reduction in growth could not be regained but this is incorrect.(18) It will be shown that in many other respects the state of current knowledge prevented our predecessors from making accurate judgements about the relationship of physical exercise to health. Much of our present knowledge has only become available quite recently. However those who were in a position to advance the cause of physical education at the beginning of this century made their judgements on the basis of available facts, which strongly influenced the selection of Swedish gymnastics as the most relevant system of physical education.

Though the argument for physical education as a cure for health disorders was convincing in the light of contemporary knowledge, its implementation encountered the thorny question of State action in areas which had traditionally been seen as the province of parents. Probably the most contentious area was the provision of school meals. It appeared from the reports of Charles Booth and Seebohm Rowntree (19)

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17. S.R.O. ED 7/3. S.E.D. Memorandum on Systems of Physical Training and Their Relation to the Personal Hygiene of School Life. 17th May 1907, signed by W. Leslie MacKenzie and Captain A. Foster.

18. Sir J. Crichton-Browne, in J.H. Watts, State Maintenance for Children (London, 1904). Report of an address to the 1902 International Conference for the Welfare and Protection of Children. "Time lost in growth can never be made up"

19. B.B. Gilbert, The Evolution of National Insurance in Great Britain. (London, 1973) 51-56; 102-113.

that the problems of poverty and starvation went beyond the resources of charitable organisations, and even those M.P.'s who cherished the ideal of parental responsibility recognised that it was the children who suffered in this situation. During a Commons debate one member remarked that as matters stood "the neglectful parent is at liberty to starve his child" (20) Nevertheless others feared that empowering local authorities to provide school meals would represent the first step in sapping the foundations of national well-being. Resistance to school meals was greater in Scotland than in England. Bills to provide school meals in both countries were introduced in March 1906 but there was such opposition to the measure in Scotland that it was withdrawn. Even while the 1908 Education Act was being debated in Parliment, there were angry scenes at a meeting of a convention of School Boards held in Edinburgh to discuss the question of school meals (21). However the Act was passed and provision of school meals, as well as medical inspection and treatment, were added to the duties of School Boards.

There is a considerable difference in the extent of State action permitted by the 1872 and 1908 Acts. In the earlier case School Boards had a clearly defined responsibility to provide "efficient education" which was generally of a academic nature. By 1908, special treatment had been approved for a variety of physically and mentally handicapped groups; transport to school could be arranged; and a range of welfare

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20. Hansard IVth Series, House of Commons, 145, 18 April 1905, col. 542.

21. W.H. Haddow, My Seventy Years (Glasgow, 1943), 71. Quoted in J. Maxwell, "School Board and Pupil Welfare", Govan School Board, 1873-1919". M. Litt. thesis, Strathclyde University, 1973, 160-167.

services were grouped around the school. (22)

When medical, legal and philosophical issues were at stake the role of Senior Civil Servants, who advised the Secretary of State on the wording of Bills, circulars to School Boards, and Memoranda on the various subjects in the curriculum, was critical. It appears that Sir Henry Craik, Secretary of the S.E.D. from 1885 to 1904, maintained close links with the Lads Drill Association in England and with the Commander of the Army in Scotland, and that he made several attemps to introduce military training in Scottish schools. That he failed to do so is an indication that there were limits to the power of even the most senior Civil Servants. However the S.E.D., were frequently required to interpret the provisions of Education Acts and to advise School Boards accordingly, and its advice and influence was thrown in favour of the acceptance of physical education. In an important decision in 1905, Sir John Struthers, who succeeded Craik as Secretary of the S.E.D., informed the Govan School Board that he considered that they were entitled to arrange the medical inspection of school children. He made this judgement against the advice of his own legal adviser and later approved Govan's action in appointing ten part-time school medical officers more than a year before the 1908 Education Act was passed. Struthers took the initiative in suggesting to the

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22. M. Mackintosh, Education in Scotland: yesterday and today (Glasgow, 1962), 34.
"The real importance of the Act of 1908....lay in its acknowledgement of education as a social service with a function and interests for beyond the schools. Education was seen as involving the physical and social welfare of the pupils and not merely as instruction carried on in the school building. The Act virtually envisaged the education system as a child welfare system, with the traditional education as simply one, though the most important, of the services provided".

Carnegie Dunfermline Trustees that they should consider founding a College of Physical Education, and he gave frequent advice on its development in the early years. Another individual who seems, in retrospect, to have used his senior position to advance the cause of physical education was Dr. W. Leslie MacKenzie, Medical Adviser to the Local Government Board. (23) Whereas Struthers rarely addressed public meetings, MacKenzie was a regular speaker at meetings of teachers or doctors, and the author of several lengthy books on school health. He advised local authorities on such matters as conditions of service for school medical officers and the schedule for medical examinations of school children. It appears that Civil Servants enjoyed a considerable degree of discretion. They could help to advance a popular cause, and, though there were limits to their powers, the contribution of that help cannot easily be minimised.

A final demonstration of the interpretation that physical education developed between 1872 and 1908 as a solution to particular problems in school and society, rather than as an intrinsic part of a Platonic view of education stressing the unity of body and mind, lies in examining physical education in its present-day form. Until 1945 the curriculum in physical education consisted mainly of gymnastics. Then, over a period of about 15 years, there was an increasing recognition of both indoor and outdoor team games, accompanied by a growth of outdoor pursuits centres catering for climbing, camping, and water sports. However the main departure since about 1960 has been a scholarly concern with the contribution of movement to general education. The activities are broadly the same today as in 1960 but there are various conflicting notions about the nature and purpose of physical education.

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23. See appendix 5.

A broad distinction might be made between those who argue for 'education of the physical' and others who claim to 'educate through the physical' (24) The rationale for 'education of the physical' is that movement provides its own justification, and that physical education activities "... offer opportunities for the development ... of skill and ingenuity for its own sake". (25) The activities are seen to be self-contained and non-instrumental, and are by their intrinsic nature, educational. Thus, Arnold argues that physical education is educational if it meets certain criteria, one of which is that "it can be demonstrated that its intrinsic concerns are valuable in themselves and that they can contribute to the development of mind..."(26) In a more pragmatic definition Morgan suggests that physical education is "a contribution to education effected through a group of physical activities centred upon gymnastics, athletic pursuits and dance" (27) A common factor in these contrasting views is the recognition that modern physical education is closely associated with the acquisition of skill. A second area of common ground is the recognition that physical education strives to educate "through thought and feeling as well as through movement" (28) This concern with the inter-relationship of body and mind, and with thought and feeling as well

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24. A.D. Munrow, Physical Education. A discussion of Principles. (London, 1972). This book is divided into two main sections dealing with the two different approaches. An American text-book, G.F. Williams, The Principles of Physical Education, is now in its 8th edition. The first six editions favoured 'education of the physical' but the two latest editions favour 'education through the physical'.

25. R. Carlisle, The Concept of Physical Education. Proceedings of the Annual Conference of the Philosophy of Education Society of G.B., 1969.

26. P. Arnold, "The Importance of movement Experience and Education to Man". P.E.A. Annual Conference, April 1974. The Mary Hankinson Trust - Memorial Lecture, 1974.

27. R.E. Morgan, Concerns and Values in Education (London, 1974), 8.

28. ibid, 5.

as with motor skills, links readily with a programme of vigorous physical activity. The antecedents of this system are to be found in the concept of physical education outlined by 19th century educators such as Almond of Loretto. (29) The values of courage, and loyalty, have perhaps been replaced by awareness of beauty in athletic movements, but there is a common concern with the use of sport and physical education for educational ends. Any system which limits its aims to purely physical effects is more properly related to training, or in a remedial situation, to medicine. In that sense contemporary physical education is different in kind from the system which was officially recognised in the 1908 Education Act.

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29. see chapter 4.

CHAPTER 1

Drill and Discipline

The Education (Scotland) Act, 1872 made attendance at school compulsory for children aged 5 to 13. The purpose of this chapter is to show that the sudden huge increase in the number of children at school created problems of discipline. Drill and physical training, which had been used successfully in the Army to establish order and discipline, were introduced in schools. The Aberdeen Physical Training College, opened in response to the demand for training courses for teachers, was owned by G. Cruden who made a unique contribution to the development of physical education in the period from 1886 to 1904.

Following the Education Act, 984 School Boards were elected covering every parish in Scotland and a Code of Regulations was issued by the S.E.D. in 1873. The Boards were required to provide adequate premises for education and to try to bring the majority of children of school age up to the minimum Standards laid down in the Schools Code. The S.E.D. gave guidance on the curriculum and inspection was carried out by Her Majesty's Inspectors. Schools grants were based largely on the average numbers in attendance and on the attainment of the Standards, mainly in reading, writing and arithmetic. The scale of the School Boards' task of providing adequate accommodation is revealed in the second Report of the Royal Commission on Education, (Scotland), (Argyll Commission) published in 1867. (1)

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1. The terms of reference of the Argyll Commission covered virtually every form of education except the Universities. The Commissioners conducted a national census of education; they interviewed a large number of knowledgeable educationalists; they employed Assistant Commissioners to conduct field surveys throughout Scotland; and they produced three large separate Reports.

In 1866 there were nearly 5000 schools offering elementary education in Scotland. These consisted of approximately 1000 parish schools, 1000 private adventure schools, and the rest, voluntary schools. (2) There were considerable discrepancies between different areas in the amount of available accommodation. For example, in the Lowlands there were no places for 41% of the children of school age; in Glasgow the total accommodation accounted for less than one half the children of school age; and in the Western Highlands there was an estimated shortage of 230 schools. (3) The premises also varied greatly in quality. Of the 484 Lowland schools examined, 71% were considered to be in good condition but of 226 schools in the Highland area only 48% were assessed as equally sound. 72% of the 233 schools in Glasgow were described as being in good condition. (4) Poorest of all were the adventure schools in the cities, schools where no less than 19% of those in attendance in Glasgow were to be found. The Assistant Commissioners, T. Harvey and A. C. Sellar, reporting on schools in Glasgow, provided graphic descriptions of their overcrowding, poor ventilation and extremely low quality of teaching. (5) For instance in one Bridgeton school, "the smell was hot, foul and oppressive, and contact with any part of the hovel, its furniture or occupants, was pollution". (6) One school in the Calton

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2. Royal Commission on Education (Scotland) (Argyll Commission) Second Report, Elementary Schools. 1867. BPP, 1867. XXV. 212-214.

3. ibid

4. ibid, 141

5. ibid, Appendix. Report by the Assistant Commissioners J. Greig and T. Harvey on The State of Education in Glasgow, 1866, 49
"... it is impossible to think of education existing under circumstances more discouraging and even hopeless. Rarely if in any instance were the premises intended for school-rooms; they are generally low-roofed and ill-ventilated, while a few old benches are made to do duty in a variety of ways. The children were generally huddled together and the smell in most of the places was very offensive".

6. ibid, 1

district contained 170 boys and girls in a room 27 feet by 21, with a very low ceiling. (7) The Commissioners found at the other extreme that more prosperous districts such as Blythswood contained several schools in which fees amounted to as much as thirty guineas a year.

The first task for the School Boards appointed in 1873 was to initiate a school building programme with the aid of government grants. Between 1872 and 1882, 330,000 additional school places were provided; 962 new schools were erected and 369 old schools were improved. As an example of growth at local level, the Glasgow School Board had 27 schools providing education for 9645 pupils with an estimated shortage of 30,000 places in 1874. By 1883 they were responsible for 62 schools capable of accommodating 43,939 pupils. (8)

The Argyll Commission presented a similarly depressing story of attendance. It established that over 90,000 children (nearly one-fifth of the school age population) were not attending school. (9) Within this picture there were different patterns and variations according to the area and parents' occupations. In the country districts of Glasgow on the south side of the river Clyde the figure rose to 69%.(11) And whereas shepherds made great efforts to ensure their children's

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7. ibid, 381

8. R.C.C.E., 1883-84. BPP, 1884, XXVl, 126.

9. Royal Commission on Education (Scotland) (Argyll Commission) Second Report, Elementary Schools. 1867. XXV.

10. ibid, Appendix. Report by Assistant Commissioners, A.C. Sellar and Lt. Col. C.F. Maxwell on The State of Education in the Country Districts of Scotland, 1866, 527.

11. Royal Commission on Education (Scotland) (Argyll Commission) Second Report, Elementary Schools. Greig and Harvey. Education in Glasgow, 479.

education, the fishing, mining and crofting communities showed less concern. (12).

The Boards set up attendance committees and employed attendance officers, and they had power to prosecute parents whose children were regular truants. (13) Co-operation from parents varied. Many appear to have rejected the idea of sending their children to school at the age of 5 and the proportion of 5-year old children in Scottish schools was significantly lower than in England. Others seem to have been reluctant to lose the services of their children as wage earners. (14) But one special and difficult problem for the Boards lay in dealing with vagrant children. With no access to washing facilities, they were

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12. Royal Commission on Education (Scotland) (Argyll Commission) Second Report, Elementary Schools. Sellar and Maxwell. Education in the Country Districts, 524
"There is a great difference in the state of education in the several classes of working prople in the rural districts; that education is lowest among the fishing, mining, crofter, and some portions of the agricultural populations, and highest among the shepherds, and the small village tradesmen; that the demand for the education of their children corresponds to the state of education of the parents".

13. J. A. Fairley, "The Beginnings of Compulsory Education in Scotland 1872-1883" Ed.B. thesis, Glasgow, 1965, 55
In one month in Glasgow in 1878, attendance officers made 3489 visits to the homes of truant children. Attendance officers could not force children to come to school unless they were vagrants. Responsibility rested with the parents.

14. ibid
Two other reasons for poor attendance are also analysed at some length by Fairley. In Dundee the majority of absentees were kept at home attending to younger children while both parents went out to work; or nursed the sick or acted as housekeeper while either parent was in prison. In country or Highland districts the children were needed to help with farming, crofting, or fishing duties which varied with the season. Mr. Scougal listed the following duties expected of country children in 1876-77. April and May - helping shepherds with lambing. June and July - potato planting and turnip thinning and sheep shearing. August and September - harvesting. October - potato lifting.

frequently verminous and diseased,at best polluting the atmosphere of the inadequately ventilated schools and at worst spreading infection. Since they were hungry and had no regular sleeping accommodation, their powers of concentration were limited. School work was difficult and irksome and occasionally led to disorderly behaviour. (15) Vagrant children provided only the extreme examples of reluctant pupils. To a differing extent many more pupils shared the same attitude. Hence, not surprisingly in 1882, even after the first phase of school building, only 56% of the children of school age in Scotland were in regular attendance. (16)

The teachers' lot was made no easier by the Schools (Scotland) Code of 1873 accepting a pupil/teacher ratio of 80 to 1, and by the presence in the same classroom of several age groups and standards of ability. Another problem lay in the insufficiency of equipment. One Inspector commented:-

> "Conspicuous among defects have been (a) the smallness and insufficient number of blackboards, (b) the tattered and defaced condition and antiquated date of maps, and, above all, the inadequacy of the supply in infant schools of picture cards and other materials necessary for systematic lessons on common objects, useful industries, number, form, colour and geography" (17)

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15. R.C.C.E., 1878-79. BPP, 1878-79, XXV, 183
    Mr. Ross H.M.I. wrote of vagrant children that they were "generally of a restless disposition and filthy in their habits, coarse in speech, precocious in wickedness...and teachers find in them an element of great disorder".

16. R.C.C.E., 1882-83. BPP, 1883, XXVI, page xii

17. R.C.C.E., 1878-79. BPP, 1878-79, XXV, 32.

The pressure on teachers was intensified still further by the need to earn school grants by their pupils' achievements in the 3 R's, which led to much drilling and repetition of simple work. The system of payment by results did allow teachers greater freedom in Scotland than in England, but in practice teachers in both countries appear to have spent a great deal of time and energy forcing children to cover the same work over and over again. (18) The justification for this system lay in the low standards of literacy revealed by the Newcastle Commission (1856) in England and the Argyll Commission in Scotland, but it put both teachers and pupils under considerable strain. (19) One description of a class summarises the disciplinary problems facing teachers.

> "They were a wild lot gathered in the Willow Allen shed.
> Not one boy had experienced any but parental discipline

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18. T. Bone, School Inspection in Scotland 1840-1966. (London, 1968), 77
"... in England there was a simple grant of 12s to each scholar over the age of 7 who made 250 attendances and who passed in each of the 3 R's, with a deductionof 4s for each failure. In Scotland the grant was 3s for each of the three subjects; but there was a further 2s per head, according to the average attendance, in Standards II and III if those pupils showed an intelligent and grammatical knowledge of the passages they had to read; and in Standards IV to VI there was also an extra grant of 2s per head if the classes from which the children came passed creditably in history and geography. Then each scholar in Standards IV to VI could be presented in not more than two 'specific subjects' (there was a list of 13 advanced subjects to choose from), and in Scotland there was a grant of 4s for each pass in these, whereas it was 3s in England"

19. Royal Commission on Education (Scotland) (Argyll Commission), Second Report, Elementary Schools. 1867. BPP, 1867, XXV. Appendix. Report by Assistant Commissioner, Alexander Nicolson on The State of Education in the Hebrides, 1866, 902
"... nearly a half of the men and two-thirds of the women were unable to write their names." The comparable figures for Edinburgh according to Nicolson were 4% for men and 9% for women but Sellar and Maxwell found that 32% of the adult population in the Country Districts could not write their names.

> before, and most of the little fellows had been used to blows. When the teacher spoke to a lad the youngster's hands were instinctively made ready to protect the head. Their minds were in a turmoil; their curiosity was at fever pitch. Some were hardy enough; some were very intelligent in appearance; some were cowed and sly but vicious, and some were dulled into semi-imbecility by hunger, disease, ill-usage. They had no conception of the meaning of an order and the teacher was obliged to drill them again and again in the simplest movements" (20)

Drill was introduced as a method of solving such disciplinary problems of the late nineteenth century. The Schools (Scotland) Code authorised grants for Organisation and Discipline. It recognised attendance at drill for boys for not more than two hours per week and twenty weeks in the year in terms of the school grant. The objectives of drill were not laid down in the Code, but Inspectors suggested that it might improve the orderly movement of children around the school; accustom pupils to obeying commands; impress on children the importance of standing or sitting still without 'fidgeting'; and improve posture and bearing.

The Inspectors were divided on the question of grants being offered for discipline. Mr. Hall considered that good discipline could not be produced artificially by a bribe, and undue concern for the grant would lead to the use of the strap and "unostentatious rib-punching". (21) Some of his colleagues were worried that repressive measures would be used at the expense of the physical and moral well-being of the pupils. There was less evidence of concern about the use of drill to achieve order. A typical comment described drill as "a capital auxiliary to moral discipline". (22 Whatever the views of the Inspectors, there was an increase

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20. G.A.N. Lowndes, The Silent Social Revolution. (London, 1937), 16

21. R.C.C.E., 1873-74. BPP, 1874, XX, 51

22. R.C.C.E., 1875-76. BPP, 1876, XXV, 161

in drill. By 1877, Dr. Middleton could report that drill was taught in all the Govan and Maryhill schools and that it had an excellent effect on school discipline because the boys had learned instant obedience to commands given by the janitors taking the drill classes. (23) Mr. Ross, commenting on the fact that drill was taught regularly in 50 schools in Renfrew, Bute and Argyll went on - "... it will soon ... be general, wherever there are militia or volunteers. The boys like the exercises, the teachers find in them a general aid to discipline."(24)

Some of the School Boards which introduced drill included the responsibility for it in the duties of the janitor. (25) Others employed itinerant instructors, and occasionally as in Renfrew, uniformed Army Volunteers were used with the approval of the Inspectorate. But, not surprisingly, instruction was soon given in the training colleges. In his first annual report, Dr. Wilson, Inspector of Training Colleges from 1874 to 1886, drew attention to the courses in military drill which were compulsory for all men students at the Church of Scotland Training College in Glasgow. (26) The course, taken by the janitor and with an examination at the end of two years, included instruction in taking classes of schoolboys. Within two years the Free Church colleges in Glasgow and Edunburgh introduced similar courses, and by 1885 military drill (for men) or calisthenics (for women) were offered at all the Scottish colleges. Hence, the Glasgow School Board found in 1882 that:-

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23. R.C.C.E., 1877-78. BPP, 1878, XXXI, 191

24. R.C.C.E., 1881-82. BPP, 1882, XXV, 156

25. Govan School Board. Minutes 1875, 110
When the Board were considering the appointment of janitors in 1875 they stated that "... it will be a recommendation if they can teach drill, but if not so qualified, then the Committee suggest that two drill instructors be appointed to the various schools." Janitors who took drill were paid an extra shilling per week.

26. R.C.C.E., 1874-75. BPP, 1875, XXVI, 118.

> "In the great majority of the Schools, Military Drill and Marching Exercises form a more or less regular part of the work, and that in about 80 per cent of the schools there are members of the staff qualified to give instruction in Military Drill." (27)

When students for teaching posts were interviewed they were asked about their abilities in drill and the Glasgow Board was satisfied that all new teachers would be able to take their own classes. As a result, headmasters in Glasgow were encouraged to introduce drill as part of the curriculum.

Each year the number of schools offering military drill was noted in the S.E.D. Annual Report (table 1). Although the numbers rose annually, less than ten per cent of the schools in Scotland were offering drill in 1884. The slow growth may have been due to the very large number of small rural schools, few of which possessed playgrounds, and which could not have afforded the additional services of a janitor or visiting instructor.

Year	1874	'75	'76	'77	'78	'79	'80	'81	'82	'83	'84
No. Inspected	2388	2720	2817	2931	2996	3003	3056	3074	3090	3131	3081
No. offering drill	19	66	81	147	174	181	224	258	265	310	296

Table 1. No. of inspected schools offering drill,1874-1884 (S.E.D. Annual Reports)

Confirmation of the function of drill as a means of disciplining unruly children came in 1883 in the work of the Boys Brigade. William

27. Glasgow School Board. Triennial Report 1882-1885, 15
"There is considerable diversity of opinion as to whether there should be a separate Drill Instructor and whether the time for Drill should be in addition to the present Time-table hours, or if not, from what branch or branches the time should be taken."

Smith, founder of the Boys Brigade was also concerned by the harshness of city life, but he was first and foremost a Christian evangelist. As a Sunday School teacher he was shocked by the complete lack of spiritual reverence of the rowdy youngsters who attended North Woodside Church. (28) He set out initially to create a solution to the problem in his own Sunday School through the use of drill and discipline, and by requiring boys to attend on weekdays as well as Sundays. The use of dummy rifles on Church premises was at first resisted by the congregation but the instantaneous success and response from the 28 boys in his Company overcame the opposition. By 1900 the Boys Brigade had reached a membership of 50,000. The type of drill used by the Boys Brigade was drawn directly from the Army. Smith was an officer in the 1st Lanarkshire Volunteers in 1883 when he founded the Boys Brigade, and according to his biographer he transferred military drill direct to the new organisation. The Boys Brigade enjoyed several advantages over the schools in their use of drill. Church halls were available for indoor drill. Companies were small and each boy was known to the officers. Drill was a means to an end - namely promotion, respect and responsibility, whereas in schools its purpose may not have been quite so clear to children. The schools had shown that drill could produce discipline which in turn facilitated the movement of large groups of children in and outof school. In the early 1880's drill consisted of marching, squad movements or static positions such as 'attention', and there was no indication that School Boards regarded drill as a form of physical education. Its aims were limited to discipline and in that context it was satisfactory. Similarly the Boys Brigade used drill to establish discipline, but in some ways (using uniforms, introducing officers and N.C.O.'s) it came much closer to the military organisation for which drill had been designed. Initially

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28. R.S. Peacock, Pioneer of Boyhood. (Glasgow, 1954), 23

there was little emphasis on the purely physical benefits of drill, and the use of gymnastic apparatus was a much later development in the Boys Brigade programme. The success of the Boys Brigade encouraged the formation of other youth organisations. (29) These and the Boys Clubs made extensive use of games, boxing and gymnastics, but drill was less popular in non-uniformed groups. (30) When physical exercise was a main aim other systems appeared to have more to offer than drill.

By 1882 the school building programme launched after the election of the first School Boards had almost succeeded in creating the number of places required in State schools for the school age population (31) but absenteeism remained a problem. It was high amongst infants in all districts. (32) Normally Scottish children started school a year later

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29. W. McG. Eager, Making Men. (London, 1953), 324
The two other main uniformed organisations formed at this stage were the Boys Life Brigade (1889) and theChurch lads Brigade (1891)

30. C.E.B. Russell, Working Lads Club. (London, 1908).
The Boys Clubs which flourished in London and Manchester made extensive use of gymnastics. In 1908 C.E.B. Russell listed 18 Boys Clubs in Britain, but only four of these were in Scotland. Russell, who in 1913 was appointed as Chief Inspector of Industrial Schools, gave an excellent guide to the planning and equipping of a youth club including detailed requirements for the gymnasium.

31. R.C.C.E., 1882-83. BPP, 1883, XXVI, Report, ix
Between 1872 and 1882 accommodation was increased from 281,688 to 619,086 places. For a school-age population of 755,072 it was estimated that 629,227 school places were required. By 1882, 619,086 places had been provided.

32. R.C.C.E., 1882-83. BPP, 1883, XXVI, Report p. xiii
The proportion of children of school age who were on school registers were as follows:

Age	On Registers	Age	On Registers	Age	On Registers
5-6	38.43%	8-9	83.11%	11-12	78.43%
6-7	70.18%	9-10	85.58%	12-13	60.64%
7-8	81.42%	10-11	79.33%	13-14	32.84%

The proportion of 5-7 years in actual attendance was only 19% in Scotland compared with over 30% in England. According to J. Roxburgh, The School Board of Glasgow. (London, 1971), 179, the attendance of infants in Glasgow never rose above 40% in the period 1873-1919.

than children in England but were expected to pass the first Standard at the same age as pupils in English schools. (33) Inspectors examined every class in a school and were in a good position to judge whether infants were at greater risk from consequent pressure of work than older children. Dr. Kerr (34) C.H.M.I. for the Western Division (embracing most of the area contained in the present Strathclyde Region) and Dr. Wilson, his counterpart for the Southern Division were agreed that over-pressure of work was not a major problem in their schools. (35) However infants were at risk, and this made parents even more unwilling to send young children to school. Absenteeism was disturbingly high in poorer urban areas and in the Highland district and fresh legislation was introduced in 1883 to assist the School Boards in prosecuting defaulting parents. For various reasons, Boards were reluctant to initiate prosecutions and the Inspectorate covering rural and Highland areas were doubtful if the new legislation would make any difference. (36) The counties of Aberdeen,Banff, Caithness, Cromarty,Inverness,Kincardine, Moray,Nairn,Orkney,Ross and Shetland (the Northern Division), covered

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33. R.C.C.E., 1884-85. BPP, 1884-85, XXVI, 198-199
Various Inspectors pointed out that if Scottish children were to be capable of passing the first Standard examination after only nine months in schools (compared with English children who had been in attendance for nearly two years) there was a definite risk of over-pressure.

34. ibid, 200
"I have no reason to believe that over-pressure exists to any serious extent in this district." (Dr. Kerr, C.H.M.I.)

35. ibid, 204
(Dr. Wilson, C.H.M.I.)

36. R.C.C.E., 1884-85. BPP, 1884-85, XXVI, 165
"The parochial member shrinks from wielding the power the law puts into his hands from fear of giving offence or of losing customers or imperilling his seat at the next election." (Mr. Ogilvie, H.M.I.). "The compulsory clause is very nearly a dead letter in this quarter. There is rarely a prosecution and still more rarely a conviction." (Mr. Dey, H.M.I.).

more than half the land area and contained a quarter of the population of Scotland. In April 1885 a 'Highland Minute' was produced by the S.E.D. which established a graduated grant based on average attendance. Whereas in the rest of the country, schools earned 4s on each unit of average attendance, Highland schools could earn a maximum of 8s on the same unit provided the weekly attendance was 80% or more of the school roll. There was an immediate improvement in attendance when School Boards were given this extra inducement to earn grants.

Increased success in ensuring attendance continued the problem of disciplining the children, first, and in a specialised way, in the infants' classes, and second, more generally among all pupils. In both fields physical education played a part in providing a solution. The problems of the infant school led to the introduction of new approaches which were potentially in conflict with the Scottish academic tradition. In the 19th century mind was considered as a collection of faculties, such as memory, will and reason which could be trained and developed for use quite separately from the body. (37) Certain subjects were seen to have intrinsic value in developing the faculties insofar as they embodied great truths and eternal standards. There were those who

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37. M.L. Bigge and M.P. Hunt, Psychological Foundations of Education. (London, 1965), 57
Descartes writing in the 17th century asserted that mind and body were substances completely different in essence.
"The essence of mind is pure thought. The essence of matter is extension; it has length, breadth, and thickness. A human mind uses the body as its instrument, but mind can act independently of the brain"
In the 1880's this was a major philesophical issue, debated in journals and books, e.g. H. Maudsley, Body and Will. (London, 1883). The journal, Mind included many articles on the relationship of body and mind, e.g. Professor A. Bain, "Mind and Body". Mind VIII, 1888; in which he discusses the proposition that the mind acts upon the body and the body on the mind. "To this I object as assuming the independent existence of the mind."402

considered that the body could be treated separately from the mind, as in the rearing of animals. (38) Those who advocated drill for school children claimed that there was a transfer or carry over from situations requiring obedience and physical responses, to discipline of the mind. The will could be trained either by mental or physical exercise of the right kind. Froebel argued that body and mind were indivisible and play occupied a central place in his theory of education. (39) His kindergarten approach required a degree of freedom for pupils which was virtually unknown in Scottish classrooms. Nevertheless there was a large amount of support for his methods. (40)

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38. H. Spencer, Education, intellectual, moral and physical. (London,1861), 60
"...we aer now coming to the conviction that body and mind must both be cared for, and the whole being unfolded...People are beginning to see that the first requisite to success in life is to be a good animal."

39. E. M. Lawrence (editor), Friedrich Froebel and English Education. (London,1952), 190-192. N. Isaacs
"The whole purpose of education must of necessity be to foster the realisation of the divine principle in man"..."..The first condition of all education is the utmost freedom for the child." "He will do so by the successive deployment and exercise and enjoyment of his every power, in the great growth-enacting and growth-promoting cycle of activities which we call play." "Play is the fundamental medium and instrument through which the child...effects his own growth in every direction that is open to him.

40. From about 1880 various individuals had been pressing for a wider use of kindergarted methods with infants. For example, Edwin Chadwick submitted a paper to the Social Science Congress held in Edinburgh on 6th October 1880 in which he argued that physical and mental activity should be used in equal proportions. He called the kindergarten system "the very foundation of a national system of education" (The Educational News. 16 October 1880) and William Jolly, H.M.I., in a lecture to teachers in Inverness stated that Froebel's system was founded on the scientific and educational use of play. He advocated a greater use of this system with infants. (The Educations News, 30 October 1880). One of the papers given at the Annual Congress of the E.I.S. in January 1881 was "The Kindergarted, or the True Principles of Infant Education".

The Inspectorate held to the view of separate faculties and called for a form of education which would involve the development of moral, aesthetic, and intellectual values.. (41) Beginning in 1886 the Inspectors lavished praise on infant departments which promoted these values, and identified musical drill, singing games, and drawing as important activities. J. Struthers, who was later to succeed Sir Henry Craik as Secretary of the S.E.D. was particularly enthusiastic about the new methods. Every year from 1887 he commented at length on the work of infant departments, suggesting that the main benefits were the development of mental faculties,, improved bodily training, and the strengthening of the will over the body. (42) In other words while agreeing with increased freedom, he accepted the division of body and mind.

The S.E.D. officially encouraged the establishment of separate infant departments in which work could be made relevant to the needs of young children. (43) Glasgow responded by arranging a course of lectures on kindergarten methods which attracted 250 teachers. In November 1884

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41. (a) The Educational News, 16 October 1880, Mr. Jolly, H.M.I.
"The work of the infant section shouls consist much more in exercising the faculties, moral, aesthetic and intellectual, than in conveying information and securing a certain dexterity in reading, writing, and countin."
(b) R.C.C.E., 1885-86. BPP, 1886, XXVII, 209
"In all large infant departments with a full staff of teachers the Kindergarten system...should be introduced..."(Mr Harvey,H.M.I.)
(c) ibid, 210
"...abundant and varied lessons in objects, form, and colour, singing, and physical exercise..." (Mr Bathgate, H.M.I.

42. R.C.C.E., 1893-94. BPP, 1894, XXXI, 286
"Children take a natural delight in movement and in making things, and when these propensities are satisfied there is an enhanced pleasure in school life and resulting energy which carry them triumphantly through what are possibly less agreeable occupations"(Mr Struthers H.M.I.)

43. R.C.C.E., 1886-87. BPP, 1887, XXXII. Report XV.
"...we trust that school managers will do all in their power to foster it by providing special infant departments, by adapting the instruction as carefully as possible to the requirements of infants, and by neglecting no means likely to stimulate their interest in their earliest school work."

the Edinburgh School Board agreed to equip a room in every infant department for musical drill. (44) The rooms were ready in July 1885 and it was understood from the outset that musical drill would be taken by the infant teachers. But there was one barrier to the extension of the system. One Inspector commented on the introduction of musical drill and singing games:-

> "It might at first be expected that the time thus expended would encroach upon the time required for elementary instruction, but I do not find this to be the case. The relaxation of mental tension and the increase of vitality render the process of mental assimilation more rapid and effective." (45)

The fear that 'elementary instruction' would suffer inhibited the adoption of the new methods of the kindergarten, because, even when attendance improved the pressure of the Standards remained an obstacle. The 1886 Schools (Scotland) Code had removed individual inspection for pupils below the third Standard and substituted a general assessment of progress. In 1890 this provision was extended to the rest of the school, and the benefits were immediately apparent. (46) The system of payment by results was effectively ended. In the same year

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44. Edinburgh School Board. Minutes, November 1884.

45. R.C.C.E., 1887-88. BPP, 1888, XLI, 215.

46. R.C.C.E., 1891-92. BPP, 1892, XXXI, 244
Having listed the advantages to teachers of the removal of individual inspection, Mr. Dunn, H.M.I., turned to the kind of changes from the pupils' point of view: "The danger of over-pressure is minimised; they are less harassed because their teacher is less harassed; there are no pariahs in the school now; the less gifted can draw their breath more freely and probably imbibe more from the example and indirect instruction of their smarter class-mates than they did from the frequent "keeping-in" and the almost clinical attentions they received from their teacher."

education was made free for Scottish children aged 5-14 and one of the last barriers to regular attendance was remove. Over the next five years attendance, particularly among infants, steadily improved, but physical activities had already been accepted as appropriate in some quarters at least.

The problem of attendance of older children required a differnt solution. Any child who had reached Standard V could immediately be exempted from attending school, and of those who could not achieve that Standard, the majority left school at about twelve years of age. Although children were supposed to attend school from 5 to 14, in reality the average school career covered only five years. In an effort to extend this period and to create an effective system of secondary education in Scotland, funds were allocated to the S.E.D. for administration of the Leaving Certificate Examination, and in 1892 pupils from Board Schools were allowed to sit the examination. (47) Initially the large towns used secondary funds to offer competitive examination bursaries to existing higher class schools, and the School Boards also established post-elementary departments in existing public schools. For example in 1893 Glasgow designated five central schools for secondary education in which the curriculum extended for four years beyond the Standards. (48) In a further sixteen schools instruction was offered for one year beyond the Standards and in the remaining forty-six schools no instruction was offered beyond the Sixth standard. (49) Advantage was taken of the new

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47. When the Equivalent Grant became available under the terms of the Education and Local Taxation Account (Scotland) Act, 1892, a sum of £60,000 was set aside for secondary education. The funds were used and administered by specially elected county secondary committees and were allocated to subsidies for higher class schools; subsidies to higher departments in public schools; bursaries; capitation grants according to passes in Leaving Certificate examinations. The first Leaving Certificate examination was held in 1888 when 29 schools took part, presenting 972 candidates. In 1891, 63 public schools were allowed to present candidates for the first time. By 1895, 202 out of the 270 schools presenting candidates were run by School Boards and the total number of candidates was 13,173.

48. R.C.C.E., 1893-94. BPP.1894, XXXI, Report xli-lviii. Table No.8

49. J. Roxburgh. School Board of Glasgow. 128

secondary grants to erect workshops, gymnasia and swimming pools. (50) Full-time instructors for gymnastics and swimming were appointed in many schools. In a space of only five years, there was an unprecedented expansion in the provision of facilities for physical education. (51) The growth of these facilities was essential for the effective disciplining of the growing number of older children in schools. Two detailed studies will show the relevance of these methods. In Edinburgh and many other areas Boards relied on drill instructors, but, much more significant for the future, in Aberdeen and the North of Scotland the staff of a new Physical Training College were employed.

The Edinburgh School Board decided in 1883 to introduce a scheme of gymnastics and drill to improve discipline among older pupils. Initially they intended to build a gymnasium at each of four schools but after finding out that there was not another gymnasium in any Board School in Scotland they decided to make a start with only one school. (52) In November 1883, eighteen months after the first proposal was made by a Board member, the gymnasium at Stockbridge School was opened. At first, attendance was restricted to boys in the upper Standards but before the end of the first year the scheme was extended to include girls. Pupils from six schools were involved two evenings each week from 6.00 p.m. till 7.00 p.m. Bar-bells, Indian clubs, wands (wooden poles about 4 feet long) and some vaulting apparatus was provided. Instruction was given by the Rolands - a family who had taught gymnastics and fencing in private

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50. R.C.C.E., 1893-94. BPP, 1894, XXXI, 296
"The (Glasgow) Board are making arrangements for the erection of workshops for manual instruction and gymnasia in schools which are receiving a share of the Secondary Education Grant..." In four years Glasgow spent £14,000 in adding gymnasia to 5 schools.

51. (a) Between 1891 and 1907 Govan School Board built gymnasia and swimming pools in 8 schools.
(b) Every school built in Edinburgh after 1886, including the two Higher Grade schools, Broughton and Boroughmuir, included a gymnasium. Swimming pools were erected at Milton House (1888), Sciennes (1892), Abbeyhill (1895), Brutsfield (1895), Broughton (1896) and Flora Stevenson (1904).

52. Edinburgh School Board. Minutes, May 1882.

schools for nearly sixty years. Permission to take part in gymnastics was seen as a prize for good behaviour and regular attendance during school hours. (53) In December 1889 four instructors, all of whom had served in the Army, were appointed as Instructors in Physical Exercises. Between them, they covered the senior classes in all 22 Board Schools, each of which had been equipped for physical training. Thereafter the number of pupils receiving instruction increased rapidly (table 2).

1883-84	1884-85	1885-86	1886-87	1887-88	1888-89
B. G.	B. G.	B. G.	B. G.	B. G.	B. G.
276	371 224	703 630	718 659	894 789	1424 2338
1889-90	**1890-91**	**1891-92**	**1892-93**	**1893-94**	**1894-95**
B. G.	B. G.	B. G.	B. G.	B. G.	B. G.
1424 2355	2385 1518	1846 2019	2237 2130	2590 2438	3487 3217
1895-96	**1896-97**	**1897-98**	**1898-99**	**1899-00**	
B. G.	B. G.	B. G.	B. G.	B. G.	
6847 6770	7711 7749	8674 7847	8092 7932	8537 8652	

Table 2. Edinburgh School Board. Number of children in the Upper Standards receiving instruction from Visiting Instructors. (Compiled from Annual Reports of the Board).

The reaction of the headmasters to these developments was rather mixed. Though the School Work Committee assessed the value of the scheme in terms of discipline, physical development and improved carriage of those who took part (54), headmasters tended to restrict their comments to the beneficial effect on discipline. (55) They seemed to accept that musical drill taken by their own teachers did not detract from the attainments of infants. As for curricular physical training for senior pupils, they were convinced that this would have an adverse effect on the rest

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53. ibid

54. Edinburgh School Board. Triennial Report 1882-1885, 84

55. Edinburgh School Board. Minutes. May 1885,
"The lessons were highly appreciated. They did much in securing order and maintaining discipline in school and playground."

of the work of the school. This led to conflict with the School Board but the headmasters' view was accepted and it was agreed at a conference between the headmasters and the convenor of the School Work Committee in 1889 that physical training would continue to be taken after school hours. (56)

It is perhaps not surprising, therefore, that the log book of Stockbridge School contains few references to this development even though one of the notes for guidance of headmasters stated that the introduction and progress of any new subject should be recorded. The headmaster of Stockbridge School did not mention the erection of the gymnasium in 1883 although it was the first of its kind in Scotland. Only after headmasters had been specifically instructed by the Board to report annually on gymnastics was there a mention of the subject in the log book. One of the new instructors was attached to Stockbridge, and within a year of his appointment, Mr. Struthers added a note of praise to his report on the inspection of the school. (57)

It would appear that headmasters of elementary schools in Edinburgh were not enthusiastic about curricular physical training and saw it as one of a number of threats to the established place of academic subjects. The progress of physical training came about because the School Board viewed it as part of an approach to attracting children to school, and

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56. Edinburgh School Board. Minutes, 6th June 1889
"Mr. Martin, on behalf of the Headmasters, stated that it was their unanimous opinion that the instruction should not be given during the ordinary school hours, otherwise it would interfere with the regular work of the schools. He also stated that it was the opinion of some of the Headmasters that the instruction could be undertaken out of school hours by the Assistants or Janitors; but the Convenor pointed out that the question was not before them as the Board had agreed to appoint properly qualified instructors whose time would be at their disposal."

57. Over 100 volumes of log books for 23 schools are held in the Edinburgh Room, George IV Bridge Library, Edinburgh, ref. YLF 1135.
Stockbridge school log book, 1, 167.
"Two classes of pupils performed very creditably gymnastic exercises of an undoubtedly beneficial character. It is suggested that these exercises might be repeated on other days under the guidance of the teacher" (Mr. Struthers, H.M.I.)

they imposed their wishes on teachers and headmasters. (58)

Because of its longer term effects the experience of Aberdeen is more important. In Aberdeen physical education grew out of the efforts of members of the Educational Institute of Scotland, although they quickly received support from the School Board. In April 1887, the Aberdeen branch of the E.I.S. invited George Cruden, secretary of the Aberdeen Gymnastic Club to address them on the topic of Physical Education in Schools. (59) Drawing on his experience of military drill with Volunteers and the additional training he had received at the Army School of Physical Training, Cruden outlined a scheme of physical training for school children. (60) In addition to his duties in the Gymnastic Club,

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58. The headmasters' attitude did change gradually and in 1891 the Board encouraged them to negotiate with the Instructors as to suitable hours. This change was reported in 1894. "The instruction, as a rule, has been given outside of school hours, but a number of the headmasters have arranged with the Instructors for having part of the lessons given furing School Hours."

    A gymnasium was included in each of the new schools planned after 1892. Milton House School, situated in the poorest district in Edinburgh opened in 1888 with a small swimming bath which was aimed more at hygiene than swimming ability. When in 1889, the Board submitted plans to the S.E.D. for the new Sciennes School it also included a swimming bath. It was questioned on grounds of cost but was later approved. No objections were raised for other baths in Broughton and Abbeyhill Schools, both of which were approved in 1894.

59. R.M. Reid, Major George Cruden, an early Physical Educator. Dip.Ed. Aberdeen University, 1971
    Cruden joined the Volunteers in 1867 while still a student at Aberdeen University. As a commissioned officer he attended a course for instructors at Aldershot in 1885 and became the first Volunteer ever to be awarded the Certificate of Superintendent of Gymnasia. In 1901, he was appointed Lt. Colonel commanding the 1st Battalion Gordon Highlanders (Volunteers). From 1868 he was secretary of the Aberdeen Gymnastic Club which won the British Championships three times between 1892 and 1903. According to the "History of the Society of Advocates in Aberdeen" (1912), he held the following offices:

    Secretary, West Aberdeenshire Conservative Association; Clerk, General Kirk Session of Aberdeen; Director of various life assurance companies; partner in a firm of solicitors, Storie Cruden & Co.; Member, Aberdeen School Board 1884-94; 1909-11; Member, Kincardinshire Secondary Education Committee 1909-14; Member, Aberdeen Provincial Committee for Training of Teachers 1909-14; Lecturer in physical training, Aberdeen University; He was made an Honorary Fellow of the E.I.S. in 1901.

60. The Educational News, 23rd April 1887
    G. Cruden, "The advantages of physical education, and how such a system should be introduced into schools."

Cruden had experimented with taking gymnastics with boys and girls in residential institutions in the poorer parts of the city. The scheme he presented to the E.I.S. had been tried out with children and with adults, and it was divided into two parts. The first part consisted of musical drill and no equipment was involved. The second part, for use with older pupils included drill, bar-bells, Indian clubs and vaulting skills. He explained that in his experience younger children quickly lost interest in military drill. (61) Although in 1903 Cruden stated that his system for children was based on Swedish gymnastics the very popular Manual of Musical Drill which he first produced in 1889 was much closer to contemporary systems of military gymnastics.

The Aberdeen branch of the E.I.S. invited him to run a course for teachers. Within twelve months, 150 teachers had attended his courses and he was encouraged to rent a building and open the Aberdeen Physical Training College in 1889. In the same year Cruden was elected to the Aberdeen School Board and immediately appointed convenor of a committee on physical education. The School Board was faced with the same problems of school attendance as in other large towns, particularly among infants. Within a few months Cruden's committee produced the following schemes:-

(a) Cruden's Manual should be adopted as a standard text book for use in all Board schools.

(b) Until the ordinary teaching staff could take their own classes for physical education the Board should expand the system of employing visiting instructors.

(c) Each year twenty selected teachers should attend a course at the Aberdeen Physical Training College at the expense of the School Board.

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61. G. Cruden, "Manual of Musical Drill and Systems of Physical Training for Teachers" (London, 1889), Preface

(d) Four schools should be used as central points for other schools in the district and visiting instructors should be based at these four schools.

(e) Separate gymnasia should be provided eventually in all Board Schools. (62)

The Board agreed to implement the first four proposals immediately and invited Cruden to draw up plans for converting infant room in four schools into gymnasia. His plans were approved in July 1890 and by March of the following year rooms had been adapted in four schools. In the Triennial Report for 1888-1891 the Board announced that the value of gymnasia had been so firmly established that every new school would henceforth incor-- porate a gymnasium. (63) Thus in the space of three years the Aberdeen School Board reached the same conclusions as the Edinburgh Board, but with the significant difference that all physical education in Aberdeen was taken within school hours, and unlike Edinburgh, in Aberdeen and the surrounding areas the subject received the enthusiastic support of teachers, headmasters and Inspectors. (64) The secondary schools and the Training Colleges adopted Cruden's system and it gradually spread into Banff, Moray, Nairn, Forfar, Dundee, Inverness-shire, and Ross

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62. Aberdeen School Board. Minutes, 25th June 1889

63. Aberdeen School Board, Triennial Report, 1888-91
The plans drawn up by Cruden, along with an architect and headmaster were for a conversion of an infant room into a gymnasium measuring 1500 sq.ft. (50 ft. x 30 ft.). They included vaulting apparatus, beams, and ropes, and other equipment.

64. (a) R.C.C.E., 1889-89. BPP, 1889, XXXII, Mr. Stewart's Divisional Report, Northern Division, 281
"Musical drill is not uncommon in the infant departments"...For older children "..an admirable system of gymnastic... is rising rapidly into public favour through the enlightened enthusiasm of Major Cruden." About Cruden's Manual, Stewart wrote "Teachers should see this book."

(b) R.C.C.E., 1889-90. BPP, 1890, XXXI, Mr. Stewart's Divisional Report, Norther Division, 295
"The excellent system of physical exercises referred to last year is spreading rapidly over the north os Scotland." Comments by at least 3 other Inspectors were also included for this and the next 3 years.

(c) R.C.C.E., 1892-93. BPP, 1893-94, XXVIII, Mr. Stewart's Divisional Report, Northern Division, 295
"The curriculum of a school...cannot be regarded as satisfactory or sufficient unless due provision is made for physical training."

and Cromarty. (65)

The approach to physical education in the North East was seen to be relevant to conditions elsewhere. The Inspectorate praised Cruden's efforts each year from 1888 without analysing the differences between aspects of physical education. T.A. Stewart, H.M.I., had been promoted to the position of Chief Inspector for the Northern Division and had previously shown no great interest in physical education. Over the next 10 years he took every opportunity in Divisional reports to praise Cruden's work and he singled out comments by Inspectors in his Division about the influence of the Aberdeen Physical Training College. Despite this enthusiasm in the North only 441 schools (roughly 1 out of every 7 schools in Scotland) were offering drill or physical exercises in 1894. This led Stewart to raise the question of whether a special grant should be paid for the subject.

> "The time has, I think, now come when this subject should either be specifically paid for by an addition to the grant, or be included under the head of discipline as one of the conditions of the higher award. Teachers should be encouraged to qualify themselves by certificates from Physical Training Colleges, such as Aberdeen, of which Major Cruden is the moving spirit. To him more than anyone else belongs the credit of having pioneered the whole movement in the north. The money stimulus would undoubtedly foster a branch... (which) has often restored appetite, vigour and health to sickly frames, and if the body reaps benefit the mind will share and share alike" (66)

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65. Aberdeen Grammar School, which had employed his staff since 1891, erected a new gymnasium and when the Girls High School was under reconstruction in 1897, similar accommodation was provided. This was followed in 1897 by the addition to Robert Gordon's College of a new gymnasium. In all three schools Cruden's staff were employed as gymnastic instructors. The same support was given by the two Training Colleges in Aberdeen run by the Church of Scotland and the Free Church respectively. Probably the most significant appointment of all was when Aberdeen University invited Cruden to accept a post as lecturer in elementary physiology and the laws of health for King's students. The practical training of these students in physical education was also under his control, and this was the first example of any Scottish University receognising physical education in this type of appointment.

66. R.C.C.E., 1894-95. BPP, 1895, XXX. Mr. Stewart's Divisional Report, Northern Division, 408-409.

There were extra forces at work (see Chapter Five) to achieve this end and the Schools (Scotland) Code for 1895 was amended. It was stipulated that the higher grant for discipline would not be paid to any school in which provision was not made for instruction in drill or some other form of physical exercise. (67) The number of schools offering drill rose from 495 in 1895 to 818 in 1896 and to 871 in 1897. This marks the official S.E.D. acceptance of the notion that drill or physical training would produce discipline. It also suggests that what was wanted in 1895 was not health, but obedience and discipline.

Cruden's work was of such significance that it deserves a separate assessment. He ran courses for teachers from Ayr, Fife, Dundee and from all over the North of Scotland. When in 1894 the Glasgow School Board reviewed the progress of physical training in their schools they decided to appoint a team of visiting instructors, and to offer courses for serving teachers. (68) Cruden was invited to take these courses which attracted over 700 teachers, of whom nearly 500 gained certificates of the British College of Physical Education. In 1903 he claimed to have trained over 3000 teachers. (69) From his own account of a training

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67. The wording of this article was slightly diferent in the English Schools Code which specifically mentioned Swedish drill.

68. Glasgow School Board. Triennial Report 1891-94
In January 1894, the Glasgow Board decided to review progress in 'physical training' a term which they had not used previously. Accordingly, they established a Committee on Physical Training which included Sir John Cuthbertson, the Chairman of the School Board. The Committee discovered that 'drill and other military exercises were taught in the Infant Department of nearly all the Schools but to the older scholars in only a limited number.' One of the first steps the Committee took to remedy this situation was to persuade the Board to advertise for drill instructors. Initially, it was intended that only two or three appointments should be made but in the event six men, all ex-Army instructors, were employed. Within three months a further two were taken on, and by 1896 there were eleven instructors travelling around the City, covering twenty-six elementary schools between them.

69. R.C.P.T., (1903), 11, p.448, para. 10, 492.

course for teachers it seems that Cruden was more concerned with giving them the skill and confidence to handle a class in the gymnasium or playground than with discussions about content.(70) They were examined on a 'first lesson' and referred to his book for further material. On the surface it is difficult to see how this kind of course could have attracted 3000 teachers but this approach was equally popular in the Colleges in which Cruden and his staff were employed.

Cruden's "system" as shown in his Manual was a collection of activities which bore no logical resemblance to each other. Musical drill and exercises with dumb-bells, bar-bells and hoops were followed by sections on rifle, bayonet and sword drill; he then brought together vaulting activities from the Swedish system and from McLaren's system.(71) In fact most of his system would have been more relevant to military training than to physical education in schools. Cruden had received his training at Aldershot; he employed ex-Army instructors and the sections of his book which dealt with rifle, sword and bayonet were based on suggestions made by Sergeant Nolan of the Army Gymnastic Staff. There is evidence that much of the material for his book was copied straight from an earlier publication by A. McLaren whose work will be examined in the second chapter. There are close similarities in all the apparatus

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70 ibid, p. 448, para. 10493

"In the special holiday classes for teachers the time is reduced to a fortnight, or twelve working days of at least four hours a day. During the first ten days of the course a scheme of instruction is carried out similar to what is given to the students attending the training colleges and on the eleventh day each student has to teach the said first lesson, which takes up about ten minutes and marks for practical proficiency in drill are awarded according to his proficiency."
On the last day a written exam was held covering the physiology of exercise and the practical work of a teacher of physical training.

71. Appendix 1. "An Assessment of George Cruden's System of Physical Education.

work but if 'Parallel Bars' is taken as an example it will be seen that the title, illustration, and description of each exercise in Cruden's book is identical with the earlier publication. (72) Curiously no-one at that time detected the similarities between the two books. It is unlikely that Cruden anticipated that his book would be so popular when he first submitted it for publication. Later it would have been very damaging to his reputation to have admitted to plundering an earlier book without acknowledgement. The opportunity arose when he appeared as a witness before the Royal Commission on Physical Training (Scotland) in 1903, but he simply stated that his system contained all the elements of the Aldershot system. (73)

Apart from Swedish gymnastics there were two other approaches, namely those of Chesterton and Alexander, which might have been more suitable for schools of that period. Chesterton relied on simple free-standing exercises which were mainly concerned with mobility of the shoulder and hip joint and movements of the trunk. More than half the content of his popular school text-book dealt with exercises which did not require light equipment, and he made no use of vaulting or other large apparatus.(74)

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72. ibid.

73. R.C.P.T., (1903), 11, 452, para 10, 522.

74. T. Chesterton, Manual of Drill and Physical Exercises. (London, 1891) Introduction by C. Roberts "The Influence of Physical Exercise on the Human Organism" see Appendix 2. "Illustrations of Thomas Chesterton's system of physical education". "If dumb-bells are introduced to day schools it is advisable to confine their use to the higher Standards. On no account should any exercises be performed with them until the pupils are thoroughly capable of performing the various movements by word of command. When such proficiency is attained dumb-bells may be used and the work apportioned to each pupil, according to his strength".

His main book contained an introduction written by Dr. Charles Roberts which in itself distinguishes Chesterton's book from the other manuals of the period.(75) No-one else attempted to give such a rational explanation of his system. Apart from his opposition to light equipment like dumb-bells and vaulting equipment, the other feature of Chesterton's work was its strong physiological foundation. This was revealed in the kind of courses he created for the British College of Physical Education and led him to be cautious with underfed children.

> "Children who are imperfectly nourished, either from want of food or from disease, should not be subjected to active physical work, as the result will be a wasting, without a corresponding renewal of the existing tissues." (76)

If it had been accepted that gymnastic skills were a legitimate part of physical education in schools, A. Alexander's three books on gymnastics would have provided more useful materials for teachers. (77)

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75. ibid

> "For children the methods of training which produce a flexible and graceful carriage of the body and limbs are better than those which develop mere strength, a jerky action of the muscles or great acrobatic skill. Free exercises and exercises with light movable apparatus together with walking and running are more suitable for this purpose than exercises on fixed apparatus in which the whole weight of the body is thrown on the arms,...the too early use of fixed apparatus may, and indeed often does, cause physical deformity, heart strain, and nervous prostration.
> In all cases it is general and not special muscular development which is to be aimed at by the physical instructor. The maintenance of the body in a graceful, erect attitude, the free use of the joints in all directions which these body structures permit, the equal use of the limbs on both sides of the body... are the objects to be secured in training the muscles, and not the detailed training of separate muscles, or the acquisition of strength in the performance of gymnastic exercises ... Gymnastics are a means and not an end... Children are taught gymnastic exercises not that they may perform them well and produce a pretty exhibition but that their health and all round bodily development may be promoted."

76. ibid

77. A. Alexander, Musical Drill for Infants. (London, 1886). Part 2 was published in 1892
A. Alexander, Modern Gymnastic Exercises, (London, 1887)
A. Alexander, Modern Gymnastic Exercises, Part II (London, 1890

The first dealt with musical drill and there is a gradual progression in the other two in the sections on gymnastic apparatus, In the third book, over twice as much space is given to advanced gymnastic skills as to marching and free exercises. (78) Alexander's books included comments which attempted to convey the feeling of the movements whereas Cruden restricted his descriptions to simple directions. (79) Alexander also added some colour by relating the origins of some of the skills. (80) Neither Cruden or Alexander tried to justify the use of apparatus or to produce a theory of physical education along the lines of the introduction to Chesterton's book. There is no indication that Cruden was aware of a conflict between free standing exercises and gymnastics based on apparatus. Without enquiring too deeply he appears to have accepted that up to the age of 12 only light equipment should be used, and thereafter that gymnastics skills were appropriate.

It now appears that the system which drew such acclaim from the Inspectorate all over Scotland had already appeared elsewhere, and was a collection of the ideas or published works of others. It was essentially the Aldershot system of drill and physical training relieved by a musical accompaniment. Although other contemporary systems seem more appropriate for children Cruden had very substantial support as

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78. Appendix 1.

79. Alexander, Modern Gymnastic Exercises. (London, 1887), 120
For example Alexander describes hand spring off parallel bars as follows: "retain the position of the body and keep hold of the bars with the hands as long as possible, until you find them pulled off with the weight of the body, when giving a parting push, which will send you on to your feet".

80. Alexander, Modern Gymnastic Exercises. (London, 1890), 95
He provided the following account of the origin of the 'Shooting Plymouth'. "We call it by the above name because about 1863 we saw it performed very neatly by a gymnast called George Cleverly, who afterwards became an artiste at Hengler's Circus under the name of Clevori....When practising the 'Hand-spring in the Centre of the Bars' it is best to attempt it on a low pair of 'parallels' with plenty of width between the bars, for in learning it there is a liability to scrape the elbows. You must learn to overturn in the hand spring before you can get into the correct position to catch the bars again".

reflected in the sales of his book (which ran to 13 editions); the number of teachers who attended his vacation courses; and the unanimous praise of the Inspectorate. In other words the weaknesses of his system did not hinder his success. In fairness to him successive editions of his manual do reveal development and the extent of his influence is remarkable when one considers that he was a senior partner in a law firm, for whom physical education was a spare time interest. His contribution to physical education spans a period of twenty-five years and from 1888 to 1900 he was arguably the most influential figure in this field in Scotland. He can be seen as an entrepreneur who founded a successful business venture on a purely sporting interest.(81) He sold physical training not only as an educational activity but as a keep-fit leisure-time pursuit for adults, and as a main part of the programme of training of Volunteers. He made a significant contribution to the development of gymnastics as a sport, but his main contribution was in the field of education and this was recognised in 1901 when he was made an Honorary Fellow of the Educational Institute of Scotland.

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81. Cruden was surpassed in this respect by Eugene Sandow who sold 200,000 copies of his own book "Strength and How to Obtain It" between 1897 and 1905. Sandow opened his first School of Physical Culture in St. James Street, London in 1897 and later started one for ladies, another for a recreative men's group at Tottenham Court Road, a fourth at Wallbrook and others in Manchester, Birmingham, and London. Other schools for Health and Strength were eventually opened in America, Australia, New Zealand and India. Sandow's main argument in support of Physical Culture was as follows "....it has at last become an accepted fact that by building up a sound constitution, expanding the chest, developing the lungs, and strengthening the heart and digestive organs, the body must necessarily be fortified against disease, and many functional disorders removed" E. Sandow, Body Building or Man in the Making, (London, 1919).

CHAPTER 2

Military Training and Drill

Drill had been advocated to remedy indiscipline in schools. Another, and distinct ground of support for physical education, and particularly for drill, came from those who envisaged it as a means of improving military potential. Though this campaign had influential supporters, it was not an unqualified success.

In December 1898 General E.F. Chapman was invited to speak at a dinner held by the Merchant Company of Edinburgh. (1) Chapman chose as his theme the need for military training in schools. Encouraged by the response to his remarks, Chapman followed up with a letter to the Master of the Merchant Company in which he stated that he was taking the opportunity of raising the question with Lord Balfour, Secretary of State whom he would be meeting at another social function.(2) He explained that the Lord Provost of Edinburgh had already promised to support his proposals and would raise the matter at the next meeting of the Governors of George Heriot's school, of which he was chairman.

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1. E. F. Chapman was commissioned on 12 June 1858, Lieutenant in August 1858, rising to Colonel in 1881 and Major General in 1889. He became a full General in March 1896 shortly before taking up his appointment in Scotland. He served in various foreign campaigns, mainly in India. He was Commander Scottish District until May 1901. Correspondence with the keeper, Scottish United Services Museum, Edinburgh Castle.

2. This correspondence is held at the Scottish Records Office (S.R.O.) Charlotte Square, Edinburgh under the class mark ED 7/1/11. Letter, General Chapman to R. Weir, 23 December 1898.

In letters to the Merchant Company and to Balfour Chapman explained that his main purpose was to encourage recruitment for the armed services. (3) Military training would be the best method of encouraging 'a military spirit'. He also contacted Sir Henry Craik, Secretary of the S.E.D., drawing his attention to the rapid growth of the Boys Brigade movement in Glasgow and their successful use of military drill. (4) Craik replied quickly saying that he personally supported Chapman's ideas but before committing the Department would like Chapman to meet Dr. Ogilvie his Chief Inspector for the Southern Division who was living in Edinburgh. (5) A few days later Ogilvie wrote to Craik, reporting that he had met Chapman and taken him to two Edinburgh schools to observe the work of two of the ex-Army instructors employed by the Board. Chapman was well satisfied with what he had seen, but, said Ogilvie,

> "... he also urges military inspection which would be difficult to give effect to except by an officer of the Department" (6)

Chapman explained this aspect of his scheme in a second letter to Craik some time later. (7) The work of specialist instructors in schools would be supervised by the adjutants of local Volunteers companies.

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3. S.R.O. ED 7/1/11, Chapman to the Merchant Company, 23 December 1898. "I do not mean that the scholars should be directly encouraged to' become sailors and soldiers, but that, through the training that is given them, the military spirit, from which sailors and soldiers are born, should be kept alive".

   S.R.O. ED 7/1/11, Chapman to Balfour, 23 December 1898. "We may hope to find recruits for the Navy and the Army in Scotland when we shall much need them".

4. S.R.O. ED 7/1/11, Chapman to Craik, 27 December 1898

5. S.R.O. ED 7/1/11, Craik to Chapman, 28 December 1898

6. S.R.O. ED 7/1/11, Mr. Ogilvie, C.H.M.I. to Craik, 19 January 1899

7. S.R.O. ED 7/1/11, Chapman to Craik, 30 January 1899.

In turn their activities would be inspected by an officer appointed to the Army Gymnastic staff in Scotland, in consultation with the Education Department. The normal Inspectors of Schools would be expected to inspect physical training.

The full extent of Chapman's scheme was given in The Scotsman on 5 January which carried copies of his letters to the Merchant Company and to the Lord Provost. There were three main points in the scheme, namely:-

> To accept physical training as part of the curriculum in Scottish Schools.
>
> The headmasters and medical authorities to decide what means of physical training may be adopted as daily practices.
>
> To determine the source from which instructors should be drawn.

He specified that instructors should generally be from 25 to 40 years of age and be trained on the model of the Army system, holding certificates from the Army Inspector of Gymnasia in the Scottish District.(8) The leader article in The Scotsman was strongly in favour of these proposals commenting that "... any system that inculcates an early sense of regard for superiors and of the importance of obedience should be welcome in schools". (9) Chapman was now in full cry and he sent out three more

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8. The Scotsman, 5 January 1899.

9. ibid. This is an interesting social comment. The children of the working classes were expected to learn to obey their 'superiors'. Education was seen as a process which should reinforce the existing social order. Therefore, drill was eminently suitable for them, just as games which required qualities of leadership were seen as essential elements in the education of the middle classes. The whole conception rested upon a notion of a stable fixed society, clearly divided into different social classes, in which education was an essentially conservative process. The Scotsman supported Chapman's scheme since it had "... the advantage of combining the systematic gymnastic exercises by which recruits are prepared for military service with such a measure of discipline and drill as may make boys realise what soldiering and sailing involve"

circulars within ten days. He instructed commanding officers of Volunteer Corps to consider how they might assist School Boards in instituting his system. He wrote to every School Board in Scotland enclosing a copy of a pamphlet entitled "Courses of Drill and Physical Exercises", (see appendix1, p.179) and he urged the Boards to use it. He said, "The object to be arrived at is the establishment of a uniform system of physical training in all Scottish schools. The plan of teaching which we have adopted in the Army has been so successful that I can recommend it to the Boards for their consideration". (10) Chapman asked Craik to give this circular official backing and suggested that properly qualified instructors could be produced by opening Public Gymnasia or "Schools-at-Arms" in regional centres under the direction of local Volunteer Corps.(11). As a follow-up to this proposal Chapman sent a further letter to the Lord Provosts of Edinburgh and Glasgow proposing that Schools-at-Arms should be erected in the two cities, for instruction in fencing, single-stick and boxing. (12) Attached to these buildings could be public gymnasia which would provide instructors for all schools

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10. S.R.O. ED 7/1/11, Chapman to Chairmen of School Boards in Scotland, 13 January 1899.

11. S.R.O. ED 7/1/11, Chapman to Craik, 17 January 1899.

12. S.R.O. ED 7/1/11, Circulars proposing the formation of 'A School-at-Arms for the Auxiliary Forces in and near Edinburgh/Glasgow' dated 23 January 1899 were enclosed. The Scotsman of 3 February reported that the Lord Provost of Edinburgh had arranged a public meeting to discuss the proposals and the Council Chambers were filled to overflowing. Headmasters from every major day or boarding school were present and Dr. Almond of Loretto sent a letter of support which was read out to the meeting. Sir John Batty Tuke M.P. and a host of high-ranking Army officers were also there. The meeting was unanimously in favour of the proposal and an imposing sub-committee was formed consisting of Lord Kingsburgh, General Chapman, the Lord Provost and Mr. Weir Master of the Merchant Company. Despite the enthusiasm in Edinburgh and also in Glasgow the School-at-Arms projects were never completed.

in the neighbourhood. At the same time he also wrote to Colonel Napier, Commandant of the Army Gymnastic School at Aldershot asking about the possibility of erecting in the grounds a training school for civilian instructors. None of these projects ever materialised(13).

The School Boards varied in their reactions to Chapman's proposals. One member of the Edinburgh Board suggested that this plan would lead directly to conscription and another denounced 'this spirit of militarism'. In spite of this opposition the Board approved Chapman's scheme and The Scotsman commented about the few dissenters:-

> "...the arguments of these anti-militarism objectors need not weigh with the School Boards of the country" (14).

Not surprisingly the Aberdeen School Board took the opposite view. The Board were annoyed that Chapman's circulars appeared to assume that physical education was neglected in Scotland and they pointed out that most of the larger Boards had been cultivating the subject for many years (15). They particularly resented the suggestion

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13. S.R.O. ED 7/1/11, Chapman to the War Office, 24 January 1899. Napier's extimates of £6,000 to £10,000 for building and £1,500 a year for running costs were duly forwarded by Chapman to Craik and to the War Office with a request that funds be apportioned in the Estimates for an extension of the Aldershot School to meet an expected demand for a large number of certificated instructors. His request was turned down.

14. The Scotsman, 19 January 1899.

15. The Educational News, 29 April 1899, exerpt from a sub-committee report of the Aberdeen School Board
"The disappointing feature of the Circulars is that they appear to have been drawn up in the belief that physical education is entirely neglected in Scottish Schools ...."

ibid, "The proposition is simply to accept the Army system. The sub-Committee, as far as its information goes, is not disposed to accept the displacement of existing arrangements by the Army system as having anything to commend it either in practice or results."

that Army instructors should be employed, pointing to the large number of teachers who attended the Aberdeen Physical Training College each year. Even if the technical skill of the Army instructors was accepted they would still prefer to employ teachers 'already practiced in the handling of large classes of children' (16). Consequently the Board drew up a statement rejecting the new scheme (17) and sent a copy to Chapman who admitted in his reply that when he had made his proposals he had not been aware of "the very excellent systems in force in Aberdeen" (18). Since then he had visited the Aberdeen Physical Training College and some of the schools and was very impressed by the quality of work.

The Inspectorate took the same line as the Aberdeen School Board. All three Divisional Chief Inspectors attacked Chapman's scheme in unusually long sections on physical education in their annual reports. Dr Ogilvie in the Southern Division drew attention to the number of teachers from his district who had attended Cruden's courses for teachers (19). In his opinion the new proposals would not add to

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16. ibid

17. Aberdeen School Board, minutes, 25 January 1899
"They consider the stand-point of the circulars to be too exclusively military, and their lack of any sort of recognition of the existing order of things in the Board's system of physical education, approved as it is by the Scottish Education Department, and in many cases warmly commended by H.M. Inspectors of Schools, as fatal to the acceptance of the propositions and suggestions in their present form".

18. The Educational News, 3 June 1899.

19. R.C.C.E., 1898. B.P.P., XXVI. Dr Ogilvie's Divisional Report, Southern Division, 450.

the already high quality of physical education in the district. T.A. Stewart, having only recently been transferred from the North to the West Division, preferred Cruden's approach to a system involving Army personnel. In his experience parents and teachers objected to the behaviour and foul language of Army drill instructors(20). He pointed out that in 1896 the Glasgow School Board had instituted classes in physical training for their own staff and between 700 and 800 teachers had attended these courses taken by Cruden and his staff. Five hundred teachers had successfully taken the examinations of the British College of Physical Education. Since Glasgow had also spent £14,000 on school gymnasia and in 1898 employed 11 full-time instructors to supplement the efforts of class teachers, Stewart felt that the Board had fulfilled their duties, and "to insist on anything further would not only be unpopular but injurious to the many other claims of education" (21), Predictably, the strongest protest came from the Northern Division. Mr. Walker, the new Chief Inspector extolled Cruden's virtues and went on to list his objections to Chapman's proposals. He too referred to the foul language of ex-Army instructors and commented:-

> "If modern military drill is so much superior to that which is practised in this district - a claim which seems far from being well-founded - by all means let the teachers be instructed in the new system, and let them add to it, or substitute it, for that at present in use" (22)

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20. ibid, Dr. Stewart's Divisional Report, Western Division, 488

21. ibid.

22. ibid. Mr. Walker's Divisional Report, Northern Division, 544.

Craik agreed with Chapman that schools should offer military training, but the objections from School Boards and from his own senior staff worried him, stemming as they did from Chapman's ignorance of what had already been achieved in schools. Whereas Craik was based in London the Inspectors were able to assess local reactions in Scotland, and he decided in February 1899 that the Department must reject involvement with the Army. He therefore wrote to Balfour saying that while he sympathised with Chapman's objectives there was a risk that his activities might produce a wave of reaction. (23) According to his information School Boards were already sympathetic to physical training and that this was "a reason against pushing interference too far". With Balfour's approval he sent a long letter to Chapman dealing with the three proposals which were causing the Department some embarrassment. First, taking Chapman's proposal that physical training be made compulsory, Craik stated that the Department would not attempt to impose policy on School Boards, who in any case would be opposed to a uniform system. This was a matter which could safely be left to the school managers in consultation with Her Majesty's Inspectors. (24). Second, with regard to certification of teachers, the Department was not willing to make it

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23. S.R.O. ED 7/1/11, Craik to Balfour, 3 February 1899.

24. S.R.O. ED 7/1/11, Craik to Chapman, 5 February 1899.
This was an interesting statement in view of the imperious wording of the Circular which Craik was to issue to School Boards only twelve months later. However at this point, in 1899, Craik wrote "...They (My Lords) have no doubt that as increased attention is given to the subject, the most carefully considered courses of instruction will be adopted in an increasing number of cases. But it must be remembered that physical instruction is already in a very high state of efficiency in many schools. The circumstances of different schools are very various and their Lordships cannot undertake to prescribe any uniform method as a uniform condition. To do so would be entirely opposed to their policy in regard to other subjects of instruction."

a condition of a grant for physical training that a member of staff should have any particular certificate of competency to teach physical training. (25) Craik agreed only that the Department was ready to consider recognising any certificate, if satisfied with the course of training. This was already an existing procedure and the Aberdeen Physical Training College was a recognised institution. Third, concerning inspection by military personnel, Craik crushed any hope.

> "But my Lords have no means of employing Military Officers as Inspectors of Schools and they do not think that such employment would be consistent with the system administered under the Education Acts" (26).

Craik's decisive letter was written only six weeks after Chapman's speech to the Merchant Company. Thereafter the Army took no further initiative in the matter and none of Chapman's proposals were implemented. During the next twelve months, pressure to introduce military training in schools came, not from the Army, but from a voluntary organisation headed by the Earl of Meath. Although these efforts were concentrated on the English Board of Education, Craik was actively involved in the discussions.

Having witnessed the success of the Boys Brigade in Glasgow, Meath decided in March 1898 to form an undenominational organisation to promote evening classes in drill.(27). Then in December of that year he wrote to the Morning Post drawing attention to the untrained and unorganised

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25. ibid

26. Despite this statement, Craik personally invited Captain Armytage Inspector of Military Gymnasia in Scotland to inspect in-service courses run by Cruden and others between June 1900 and June 1902 in Cupar, Fife, Hamilton, Dumfries and Glasgow.

27. The Lads Drill Association and its Relations with Government, 1899 to October 1902, pamphlet (London, 1902)5. A copy of this pamphlet and the Annual Report of the Association for 1901 is held in S.R.O. ED 7/1/13.

state of civil defence. (28). He approached the War Office in January 1899 with the suggestion that military drill should be made compulsory for all boys in inspected schools.(29) Encouraged by the reaction to his scheme, Meath then arranged a meeting with the Duke of Devonshire, Lord President of the Council during which he suggested that the War Office and the Education Department should confer about how his ideas might be implemented. Meantime he altered the name of his organisation to The Lads Drill Association and announced that its main objectives would be:-

> 'That Military and Physical drill be taught in all schools earning a Government Grant, the War Office to authorise the official inspection of such drill under the orders of the General Officer commanding districts. The instruction in these schools to be that laid down in Army schools' (30)

The War Office and the Board of Education agreed to set up a joint committee, including representatives of the Association, to consider Meath's proposals. After several meetings of this working group, a conference was arranged at the Privy Council offices in July 1900 to which Sir Henry Craik and Sir George Kekewitch, Secretary of the Board of Education, were invited. (31) At this conference it was agreed that the working group should draw up a Model Course of Physical Training based on the Aldershot system, for use in elementary schools in England.

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28. Lads Drill Association. Annual Report, 1901, 8

29. The Lads Drill Association and its Relations with Government, 1899 to October 1902. ibid 6.

30. ibid, 6.

31. ibid, 8.

Colonel Malcolm Fox, a former Inspector of Military Gymnasia undertook the task of producing the Model Course, which was submitted in draft to a further conference at the Privy Council offices in January 1901. The effect was to give physical training for schools a distinctly military bias. Craik was again present at this meeting which fully endorsed the Model Course. (32) The course consisted of squad drill, and a variety of free-standing exercises covering the arms, legs and trunk. As Smith points out, "no attempt was made to adapt the exercises to suit children", (33) and no allowance was made for weak children. In fact, Fox suggested that weak children needed regular physical training, an argument which might have been more appropriate for soldiers who had been medically examined and pronounced fit for exercise. The Army influence was extended to include training of teachers in the use of the new Course, and the contribution of the Lads Drill Association was recognised in the form of the Board of Education's consent to certificates of the Association being awarded to teachers who successfully completed training courses. The teaching profession in England were strongly critical of the military basis of the course, but the fate of the Model Course was sealed by the insensitivity of the Army instructors who took courses for teachers. Middle aged teachers, forced to attend these courses, were subjected to strenuous

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32. ED 7/1/12, Correspondence between Craik and Mr. Gunn, H.M.I. Gunn first approached Craik in October 1900 with the suggestion that a Model Course for Scotland should be compiled by the S.E.D. Only after attending meetings at the Privy Council did Craik follow this up, and in December 1901 he sent Gunn a draft copy of the English Model Course along with the new Army drill manual. A few copies of Gunn's version were printed and with the Chairman's permission Craik circulated copies to the members of the Royal Commission on Physical Training in November 1902. However no further action was taken and the Scottish publication was dropped.

33. W.D. Smith, Stretching Their Bodies. (London, 1974), 108

activity and abusive language from the ill-educated N.C.O.s. (34)

Craik had rejected any formal link with the Army, and the resistance to the Model Course from teachers in England must have strengthened his views. However he was still convinced of the need for military training in schools, and with Balfour's approval, the S.E.D. issued a strongly worded circular on the subject of Physical Exercises in Schools(35) in which School Boards were urged to extend the teaching of military drill. Under theSchools (Scotland) Code, 1899, the grant was based on the general efficiency of the school, and the new circular stipulated that "the thoroughness of the physical training must form a very important element in that test".(36) The Educational News commented on the strength of the implied threat:

> "Lord Balfour of Burleigh has issued a circular of more than ordinary importance. General Chapman himself could hardly have employed more forcible language in appealing to School Boards on the subject of military drill in the school. Lord Balfour indeed goes further than the General could have ventured to go, as he threatens reduction of grant if drill is not satisfactory to Inspectors who must themselves be trained in the art..." (37)

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34. P.C. McIntosh, Physical Education in England, 141
"The Ling Physical Education Association drew up a Memorial to the Board of Education attacking the Model Course, and collected 1408 signatures from teachers, doctors, professors and other interested people".

35. R.C.C.E., 1899-1900. BPP, 1900 XXIV, S.E.D. Circular 279. "Physical Exercises in Schools", 3 February 1900.

36. ibid.

37. The Educational News, 10 February 1900.

As for the Inspectors who had raised such strong objections to military drill, the circular continued:-

> "... it will probably be felt that fitness to judge of it ought to form an important qualification in those who aspire in future to fill such posts..."(38)

The circular was concerned more with military training than with physical education, and there was a strong emphasis on citizenship in the sections dealing with the post-school group. (39) Discipline and obedience, terms which had been associated with drill and physical training for twenty years, were omitted. The educational objectives to which physical education was expected to contribute were comradeship, responsibility and individual resource. In the context of military service, the circular suggested that physical education might help to develop "the moral elements of responsibility, duty and readiness of judgement, along with the physical capacities'. Two items of policy which Craik had established to deal with Chapman's earlier scheme were reaffirmed. The S.E.D. would not dictate which methods should be employed - this would be left to managers of individual schools. (40) Secondly, any developments should take place 'without direct inter-

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38. Circular 279, ibid

39. ibid. Cadet Corps were recommended as the means of conveying these values to those in the 14-18 age group. Craik made several attempts over the next two years to encourage the formation of Cadet Corps but all efforts failed and the Corps remained a Public School type of organisation. In fact the following objectives set out in the circular seem more in keeping with the general aims of Public Schools.

    "Indirectly they bring the individual into contact with the principles which lie at the foundation of national defence, and they bring home to him his duties and responsibilities as a citizen of the Empire, while at the same time giving him an opportunity of strengthening and developing his physical powers, and rendering him more fit for his ordinary employment".

40. S.R.O. ED 7/1/11, Craik to Chapman, 9 February 1900.
    "We must necessarily proceed with great care in the matter, but the chief object is to enlist local interest in the subject and to call forth local initiative in starting the work. We are anxious to avoid anything which may have the appearance of Departmental dictation as this might hinder the object in view".

ference by any military authority'.

In March 1902 Balfour took advantage of the growing concern over unfitness of Army recruits during the Boer War (41) to place before the Cabinet a memorandum requesting the appointment of a Royal Commission on Physical Training in Scottish Elementary Schools. (42) Reviewing progress since the appearance of circular 279, Balfour commented:-

> "It was feared that in doing so we would meet with strong opposition from those who dread 'militarism' in the schools. Such opposition has, as a fact, been slight and insignificant" (43)

It would appear that Craik was content to leave his staff of Inspectors to ensure that the Boards promoted military drill, because he took no further action between 1900 and 1902, and the matter was not raised at his regular conferences with the Chief H.M.I's. (44) Instead he concentrated on trying to integrate youth organisations such as the Boys Brigade and Cadet Corps into the educational system. (45) Both he and Struthers, who succeeded him as Secretary of the S.E.D., were convinced that compulsory part-time attendance at further education classes, including drill, was the best answer to hooliganism. (46) Writing to Balfour shortly after publication of circular 279, Craik proposed amend-

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41. For a description of these events, see chapter 5.

42. S.R.O. ED 7/1/23, Cabinet memorandum. "Cadet Corps and Military Drill in Schools" 5 March 1902 signed by Balfour of Burleigh.

43. ibid.

44. S.R.O. ED 7/4/27.

45. S.R.O. ED 7/1/23, "Cadet Corps and Military Drill in Schools", ibid. "it can only be done by bringing Cadet Corps within the range of our educational operations and treating them, not as imitations of Army organisations, but as integral parts of our school system".

46. R.C.P.T. (1903)11, p.2 para 8. see also R.C.C.E., 1903-04. BPP, 1904, Circular 373 "Suggestions for Supplementary Courses in Day Schools" 16 February 1903, signed by Sir Henry Craik.

ments to the Evening Schools Code which would qualify military drill for a higher rate of grant, and which would give Cadet Corps and Boys Brigade companies the status of evening schools. He commented:-

> "They might be managed and conducted by School Boards but would probably be much better in the hands of local associations ... It would be an immense civilising power in our great towns" (47)

This would have been the first positive step towards Government support of a Youth Service, even if initially it was restricted to organisations which used military drill, and it is interesting that Craik wanted to avoid contact with the War Office.(48) In May 1900 he sent copies of the Evenings Schools (Scotland) Code, 1900, to Chapman, drawing his attention to the changes, and a few days later in reply to a query from Thomas Cuthbertson, President of the Boys Brigade for Glasgow, confirmed that the new Code gave power to the S.E.D. to recognise a Boys Brigade company as an evening school. With Craik's support, Cuthbertson then sent a circular letter to every company in Glasgow explaining how to apply for grants under the new arrangement. Two years later, in evidence to the Royal Commission, Cuthbertson remarked rather bitterly that they had scarcely had time to benefit from this scheme before the regulations were rescinded.(49) It appears from Craik's reply that there had been criticism on the grounds that the age range of these organisations overlapped with the compulsory school age, and grants were being paid to

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47. S.R.O. ED 7/1/11, Craik to Balfour, 1 March 1900

48. S.R.O. ED 7/1/20, Craik to J. Hozier M.P., 28 February 1900 "The moment for a very large movement in this direction is present, but it will soon pass and the whole plan may be upset by some action of the War Office, taken in ignorance of the social and educational circumstances of the Country".

49. R.C.P.T. (1903) 11, 561, para 12,967 and 564, para 13,066.

day schools and Boys Brigade companies for the same boys. (50)

During the period 1900-1902, there were reports of increases in the number of country schools offering military drill (51) but the large towns and cities took no more notice of Craik than they had of Chapman. Coupled with the failure of efforts to offer grants to Cadet Corps and Boys Brigade companies, this amounted to a rejection of the philosophy of circular 279. The Cabinet approved Balfour's request for the appointment of a Royal Commission on Physical Training in March 1902, and their work will be considered in chapter five in the context of official investigations of the physique of the nation.

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50. ibid, 566, para 13,110.

51. R.C.C.E., 1900-01. BPP, 1901, XXII, 496-497; 572
R.C.C.E., 1901-02 BPP, 1902, XXXIII, 709.

CHAPTER 3

Overpressure, Swedish and German Gymnastics

Drill was introduced to deal with the problems of indiscipline which followed compulsory attendance at schools. Physical education - in rival systems - was also advocated as a remedy for the health disorders, commonly summarised as overpressure, which were also alleged to have increased from compulsory attendance.

The Education (Scotland)Act of 1872 had made school attendance compulsory but there were loopholes in the English Act of 1870. A.J. Mundella was appointed Vice President of the Privy Council for Education in 1880 and within six months had piloted legislation through Parliament to complete the process of making attendance compulsory.(1) Almost immediately he received representations from the National Union of Elementary School-teachers, who were convinced that children's health was threatened by the pressure of trying to meet the Standards laid down in the Schools Code.(2) In place of the more authoritarian approach of his predecessor, Robert Lowe, Mundella set up a Code committee, over which he presided.(3)

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1. W.H.A. Armytage, A.J. Mundella 1825-1897. (London, 1951), 205

2. S. Buxton, "Over Pressure". Nineteenth Century. 16 November 1884. 807. Buxton quoted from a letter from the N.U.E.T. to Mundella. "Nearly all the over-pressure in this country may be traced to"..."the system by which"..."the payment of the grant depends on the individual powers of the scholars".

3. There were separate School Codes for England and Scotland, to take account of differences in legislation and tradition. Mundella's Code committee was concerned only with English schools but 'payment by results' and 'over-pressure' received considerable attention in the Scottish Press. Throughout the thesis 'Schools Code' refers to England, and 'Schools (Scotland) Code', to Scotland.

The committee considered suggestions from School Boards, Inspectors, and other interested parties but Mundella was not convinced that the system of payment by results was in itself a threat to health.(4) The new Schools Code which came into force in May 1883 therefore retained the system. However he did ask the Registrar-General to consider whether there was any statistical proof of deterioration in the health of school children.

Although the evidence was not conclusive the Registrar-General did give some support to those who accepted that over-pressure existed in schools. For instance he wrote -

> "... these statistics doubtless tend to support the view that the strain of education produces in a certain proportion of children injurious effects upon the brain and nervous system".(5)

In several of his previous reports the Registrar-General had been optimistic about the reduction in child deaths from infectious diseases, mainly through vaccination, but he noted in 1882 that deaths from nervous diseases were slightly on the increase(6). The controversy about over-pressure centred on the following three main issues.

> Whether the Registrar General's statistics supported the case that child deaths were increasing due to over pressure of school work.(7)

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4. W. Armytage, A.J. Mundella.(London, 1951), 210.

5. 45th Annual Report of the Registrar-General of Births, Deaths and Marriages in England for the year 1882. BPP,1884, XX, 15-16.

6. ibid.
"It would appear therefore, that while the mortality of children from all causes, and from zymotic causes, has considerably diminished, the general improvement has not affected this class of cases". xv.

7. S. Buxon, (opus cit), 811-812.

Whether over-pressure was a direct and inevitable outcome of the system of payment by results.(8)

Whether the worst effect could be avoided by adopting certain safety measures, for instance, by providing cheap school meals or by introducing physical training.

Scottish teachers were also concerned about the question of over-pressure. In January 1883 two doctors addressed the annual conference of the Educational Institute of Scotland on this question.(9) One of them concluded that death rates were likely to increase by about two per cent per annum among children of school age. These alarming figures were publicised in the January and March issues of the Educational News. The issue was also discussed at local level at three different branch meetings held at Stirling, Dunfermline and Glasgow in the spring of 1884. The Educational News devoted two further leading articles to the subject in June.

Mundella referred briefly to over-pressure in introducing the Education Estimates in the Commons in July but Mr. S. Smith, M.P., made a major speech on the subject. He had gathered information from doctors and teachers throughout the country and quoted extensively from their correspondence. Unfortunately during the Debate Smith's recommendations that gymnastics be introduced; that medical inspection of school children be instituted; and that cheap school meals

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8. (a) W.J. Corbet, "Is Insanity on the Increase?" Fortnightly Review Vol. 41. April 1884. (b) C.B. Adderley, "Cramming in Elementary Schools". Nineteenth Century Vol. 15. 15 February 1884. (c) C. Dukes, "Work and Over-work in Relation to Health in Schools." (London, 1885). Pamphlet available in the National Library of Scotland ref. 1893.29.(12). (d) C. Allbutt, "Nervous Diseases and Modern Life". Contemporary Review.Vol. 67. February 1895. (e) C. Roberts, "The Medical Inspection of and Physical Education in Schools." Royal Commission on Secondary Education in England and Wales. BPP, 1895, XL1X, appendix V.

9. The Educational News, 20th January 1883.

be offered on a voluntary basis, were not fully discussed.(10) During the following Debate none of the speakers denied the existence of over-pressure; they argued rather about the extent to which it existed. Sir Lyon Playfair, for instance, argued against the popular interpretation of the Registrar-General's statistics for 1882. He was convinced that the general health of children was improving and that a very small proportion of children in schools were suffering from over-pressure. Little time was given to discussion of measures to deal with the problem and at the end of the Debate, the Government gave no indication that they intended to take any further action.

Two important editorial articles were produced in The Lancet in July and August 1883. The first was a lengthy explanation of the etiology of over-pressure and it completely ignored psychological explanations. The explanation offered to account for over-pressure was exhaustion, that is "... an uncompensated consumption of tissue, and if the work be further increased exhaustion may proceed so far as to enfeeble the faculty of recuperation itself, to such an extent that it will no longer even replace normal waste".(11) The article

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10. Hansard. Third Series, Vol. CCLXXXll, House of Commons, col. 1893. Mundella, in introducing the Estimates referred to two aspects of over-pressure, namely overwork and under-feeding. He described a scheme in Dorset for providing cheap meals. "There is no over-pressure on the children, and it proves that there is no over-pressure where there is regular attendance and good feeding." S. Smith quoted from many letters from teachers and doctors stating that over-pressure did exist. He thought the solution was to make the school grant dependent on the health of pupils. No assurances were given by Mundella that he would consider any of Smith's suggestions (col. 596-99).

11. The Lancet, July 14th, 1883, vol. 11, 63
This purely physical explanation held sway for many years. Sir John Batty Tuke in a series of lectures in 1894 concluded that insanity could be explained as a congestion of the tissues of the brain. He wrote, "To approach the treatment of the Insanities through the portal of psychology is hopeless; we have gained nothing by taking that road in the past, and can hope for nothing in the future." The Insanity of Over-Exertion of the Brain. (Edinburgh, 1894), 51.

went on to suggest that mental activity burned up tissue and if the amount of mental activity was excessive this brain tissue would not be replaced. This explanation, which would not be accepted by physiologists today, was repeated from time to time by various medical authorities over the next 15 years. The second article took up Mundella's stance, that only children who were weak from hunger were in danger of over-pressure.(12) 'The Lancet' concluded that "the education system is not overworking children, but it is demonstrating that they are under-fed.(13) This is a curious statement in that the journal was making no attempt to deny that many children in schools who were under-fed might be unable to meet the demands made by the educational system. Both articles agreed that grave damage could result from exhausting a child who was under-fed. They simply concluded, however, that if cheap meals were made available universally the problem of over-pressure would disappear. "Do not reduce the number or difficulty of the lessons but increase the quantity and improve the quality of the food".(14) The Social Science Congress, meeting at Huddersfield in October, also concluded that children who were under-fed were at risk. But Sir Francis Sandford, Secretary of the Board of Education, replying to the National Union of Elementary Teachers in November insisted that these accusations were exaggerated.

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12. The Lancet, August 4th, 1883, Vol. 11.
"If their brains were not stimulated by intellectual work they would be left undeveloped" 191.

13. ibid, 191.

14. ibid.

In his opinion only a few children were in danger through over-pressure.(15)

After a large public meeting held at Exeter Hall on 26th March 1884 under the Chairmanship of the Earl of Shaftesbury, Mundella agreed to institute an official enquiry. He appointed Dr. J Crichton-Browne to carry out the investigation.(16) Browne admitted that he had never visited an elementary school prior to his appointment and at that time he was superintendent of a lunatic asylum. Before being appointed he had already written a book in Cassell's Health Series, covering nervous diseases,in which he had attacked the current system of education on the grounds that it could cause over-pressure. Mr J Fitch, HMI, who accompanied Browne on his visits to fourteen London elementary schools was extremely critical of the methods employed to solicit information.(17) Browne's official report was certainly written in dramatic and emotional language.(18) Browne

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15. The Educational News, 1st December 1883.

16. Copy of Report by Dr. Crichton-Browne to the Education Department upon the alleged over-pressure of work in Public Elementary Schools. BPP, 1884, LXl, 261
    It is interesting to note that although Mundella did not announce his intention to appoint Browne until April 1884, he had already on 16th February asked Browne to begin his investigation. The Report was submitted in June of that year.

17. ibid, 315. "Memorandum relating to Dr. Crichton-Browne's Report by Mr J.G. Fitch, one of Her Majesty's Chief Inspector's of Schools.
    He asked pupils to put up their hands if they had ever suffered from headache. Then asked whether it was at the back, front or on top of the head; and whether it was in the morning or afternoon.

18. For example, "The infantile lip that would curl with contempt at any reference to a witch or a ghost, quivers with anxiety at the name of a Government Inspector..." ibid, (266) and, "Very pathetic it is to hear them sing in thin quavering voices, some perhaps almost with the dews of death settling upon their brows.
    "Happy little sunbeams,
    Happy are we ..."
    These children want blood, and we offer them a little brain-polish; they ask for bread, and receive a problem; for milk, and the tonic-sol-Fa system is introduced to them" (267).

concluded first that 46% of the 6,580 children he examined were suffering from headaches which was his main criterion for identifying over-pressure; second, that girls were more prone to headaches than boys and that the incidence of headaches increased as children progressed through the Standards; third, that school children complained of headaches in the afternoon when, he pointed out, they had been involved in school work for four or five hours; fourth, that this could be related to the high incidence of sleeplessness.(19) He therefore called for the introduction of medical inspection of school children and the maintenance of accurate anthropometric data. He was convinced that the less intelligent, the weak and the poor suffered permanent damage from their experience of school.(20). Following publication of the report Browne and Fitch entered into an acrimonious correspondence in the columns of The Times which kept the issue in the public eye.(21) However, at a public meeting in November 1884 attended by representatives of the London School Board

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19. ibid, 283-285

20. ibid, 310
In one school alone he considered that 129 out of the 475 children he examined were half-starved. He commented "... the starved brain is incapable of doing fruitful work ... Education must have regard to the quality of the material with which it had to deal, and it cannot ignore the fact that a good deal of that material is quite unfit for its operations." 10.

21. Letters from Browne to 'The Times' were published on the following dates in 1884: 16th, 18th, 20th September; 8th, 13th October; 6th, 12th November. The two letters in October were lengthy replies to criticisms by Fitch who also submitted letters on 20th September and 18th October.

and the N.U.E.T.. Fitch's memorandum was rejected.(22) The teachers accepted Browne's conclusions and expected the Government to make a statement on proposals to eradicate the problem. Throughout November and December The Lancet published articles supporting Browne and calling on the Government to set up a larger inquiry into the effects of compulsory school attendance on child health.(23)

The Education Department, and Mundella in particular, came under severe criticism for their handling of Crichton Browne's Report.(24) Mundella was in favour of encouraging School Boards to provide school meals as long as they did not become a charge on the rates, and he accepted chairmanship of a Cheap Meals Association. At a public meeting held to publicise the case for Penny Dinners he rejected the idea that starving children should be supported by the Poor Law. Accepting that there was a risk of undermining parental responsibilities, he was nevertheless in favour of offering cheap school dinners rather than allowing children to starve.(25) Claims

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22. The Educational News, 15th November 1884, 756.

23. The Lancet, 15th November 1884 (879) 22nd November 1884(926) 6th December 1884 (1016) 13th December 1884 (1070) "The voice of the medical profession is almost unanimous in acclaiming the justice and wisdom of Dr. Crichton-Browne's inquiry and report".

24. "Over-pressure in elementary schools" Westminster Review. LXVll January 1885.
In this 20-page review,Mundella was severely criticised for his conduct of the over-pressure issue. The article singled out his attempt to suppress Crichton-Browne's Report. Although the writer gave complete support to Dr. Browne, his solution was to alter the Schools Code and he warned his readers agaiinst any scheme for the State to feed or clothe school-children.

25. The Educational News, 6th December 1884.

that physical education could be used as a cure for over-pressure were examined during the International Health Exhibition opened in London in August 1884. There were various systems in use at that time of which the most popular were Swedish and German gymnastics. It was the former which engaged the attention of the conference on education held as a part of the Exhibition. Miss Bergman (26) conducted a class of girls in Swedish gymnastics every Monday and Wednesday for the two months of the Exhibition, and Dr J. Holm (27) was invited to address the conference on 'Gymnastics and other Exercises'. He took the opportunity to advance the claims of the Swedish system, and at the same time to attack German gymnastics. This conflict between Swedish and German gymnastics had also occurred in other countries.(28) The case for German gymnastics

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26. J. May, Madame Bergman - Osterberg. (London, 1969). Miss Bergman was employed by the London School Board as lady superintendent of physical exercises from 1881-85. In 1885 she opened a Training College for women teachers of physical education, which was transferred to Dartford in 1895. See also J. May, "The influence of the Local Education Authority in London on the development of Physical Education". Ph.D thesis, Leicester, 1971

27. Dr. J. Holm also addressed the Manchester conference on Health and Education held in 1885. In 1888 he and Dr. A Broman were appointed by the London School Board to develop the Swedish system and Thomas Chesterton was appointed as superintendent of physical exercises. Two years later Broman and Holm were dismissed and the Swedish system for boys was rejected, although the Board still employed a lady superintendent who continued the Swedish system for girls. (P.C. McIntosh, The Curriculum of Physical Education - an Historical Perspective, in Curriculum Development in Physical Education, editor John Kane, (London, 1976), 23.

28. F.E. Leonard and G.B. Affleck, A Guide to the History of Physical Education. (London, 1947). For a description of events in Prussia, see p. 123-125; and an account of the conflict in Denmark, see p.189-190.

is best seen in A. MacLaren's book 'A System of Physical Education'(29) and the Swedish system was described in full by Baron Nils Posse.(30) Both systems claimed to affect health and strength but they differed considerably in content and method. Since the conflict continued in Britain for a further twenty-five years a brief comparison of the two systems will now be made.

Although P.H. Ling originally created three branches of Swedish gymnastics - educational, medical and military - it was the medical form which was imported to Britain in 1849.(31) This was used in the treatment of injuries and deformities as in contemporary physiotherapy,and it was Ling's son, Hjalmar, who developed educational gymnastics. He devised gymnastic apparatus and arranged exercises in progressive tables according to the effects on particular parts of the body. The result was a series of lesson plans incorporating floor exercises and exercises on apparatus. In each lesson every major muscle group or joint complex was exercised under the following ten headings. (The figures in brackets indicate the number of exercises in each group listed at the end of Posse's book.)

	Introductory Exercises	
	Arch-flexions	(175)
General	Heaving-movements	(100)
	Balance-movements	(157)

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29. A. MacLaren, A System of Physical Education.(Oxford, 1869). This book was described by the outstanding American physical educationist Dr. Edward Hartwell in 1885 as "the best that England has yet produced". (Physical Training in American Colleges. Circulars of Information of the Board of Education. No. 5-1885, Washington. A copy is held in the Mitchell Library, Glasgow.)

30. N. Posse, Special Kinesiology of Educational Gymnastics. (Boston, 1894). Copy held in Mitchell Library, Glasgow. Leonard and Affleck describe Posse's book as "more complete than anything published in the Swedish language."(333) See appendix 3. "An assessment of some of the main Swedish gymnastic exercises".

31. F.E. Leonard and G.B. Affleck, History of Physical Education.160. See also T.J. Surridge, "Swedish gymnastics in England: the work and influence of Mathias Roth". M.Ed. thesis, Manchester, 1974, Part II, 15-33.

	Shoulder blade movements	(153)
Special	Abdominal exercises	(93)
	Lateral trunk-movements	(74)
	Slow leg-movements	(81)
General	Leaping (including vaulting)	(135)
	Respiratory exercises	(59)

Virtually every lesson required the use of apparatus specially designed for the Swedish system, most items of which are still part of the standard fittings of school gymnasia in Britain. The beams (known then as the horizontal bar) were the most important piece of apparatus, followed by the wall-bars (known then as bar-stalls or rib-stalls). Other fixtures included window ladders, vertical and inclined ropes and benches. There were only two pieces of large, movable apparatus, namely the vaulting horse and the vaulting box. The core of the system was arch-flexions (later known as span-bending or spanning): heaving: abdominal exercises and vaulting. If taken with children who were not already suffering from pulmonary or cardiac disorders, and if the exercises were performed correctly and regularly several times each week they would have produced increased strength, local muscular endurance, and the ability to perform certain vaulting skills.(32) The effects on joint mobility are less certain and the effect on cardio-respiratory efficiency would have been moderate in the case of persons with sound hearts and lungs. For children or adults with cardiac conditions this form of gymnastics could have been dangerous without medical supervision. However the system was dependent on the availability of Swedish apparatus, and the more strenuous exercises would only have been possible in a fully-equipped gymnasium.

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32. In Chapter 8 all the main forms of physical education will be evaluated in the light of the knowledge available then, and now.

Archibald McLaren of the Oxford Gymnasium was asked to solve a particular problem for the Army in 1861. A system of exercises was required to train and prepare soldiers physically for the rigours of military combat.(33) McLaren devised a programme of exercises based on German gymnastics (see Figures 1-11 on p.59) and by carefully recording initial measurements and the same dimensions at the end of his course, was able to demonstrate that in the context of the Army, German gymnastics would increase strength and develop physique.(34) He later applied this system to students and children, carefully recording improvements, and included his results in his 1869 publication on physical education. McLaren was as insistent as were the followers of Ling that physical education must be regular and progressive, and carefully supervised.(35) Whereas the Swedish system was built on tables of exercises, McLaren left the selection and order to the intelligence and judgment of the instructor. On the question of equipment he was adamant:

> "The entire range constituting the system is performed with apparatus either moveable or fixed; all exercises of mere position or posture have been avoided, for in no way do they furnish adequate exercise to the healthy".(36)

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33. Dr. E.A. Parkes, Practical Hygiene, (New York, 1883). 584-585
Parkes reported on the objects and application of McLaren's system in the Army as follows:
"The instructions have two great objects: (1) To assist the physical development of the recruit; (2) to strengthen and render supple the frame of the trained soldier. Every recruit is now ordered to have three month's gymnastic training ..... This training is superintended by a medical officer ..... The exersise for the recruit is to last only an hour a day, and in addition he will have from two to three hours of ordinary drill."

34. A McLaren, Physical Education. (London, 1869), 64-94. See also Appendix E. 488-489
Table of measurements of first detachment of non-commissioned officers selected to be qualified as Military Gymnastic Instructors.'

35. Ibid, 101
"they (gymnastics) mean a gradual, progressive system of physical exercise, so conceived, so arranged, and so administered, that it will naturally and uniformly call forth and cultivate the latent powers and capacities of the body..."

36. ibid, 105.

The leaping rope (performed with straight legs)

p.71

Fig.1

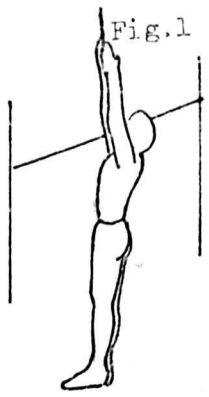


Fig.2

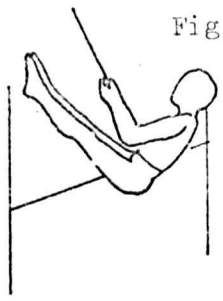


Fig.3

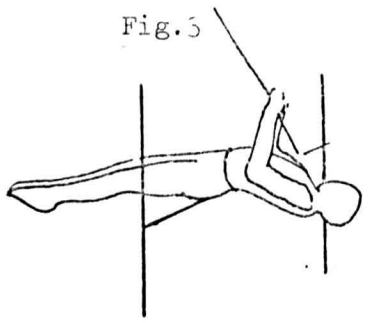


Fig.4

The vaulting horse

p.110

Fig.5

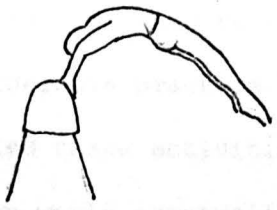
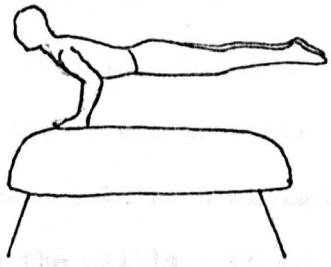


Fig.6 p.131



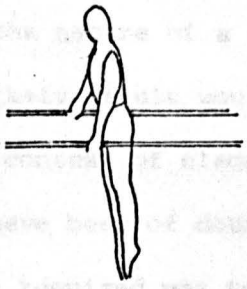
Trapezium

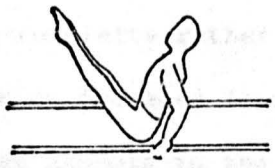
Fig.7

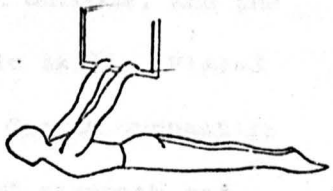
Fig.8

Fig.9 p.221

Parallel bars forward balance (with straight legs)



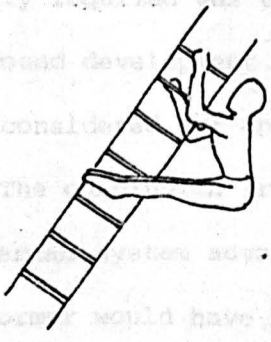




facing down - body straight

The inclined ladder

p.352



Pair of rings

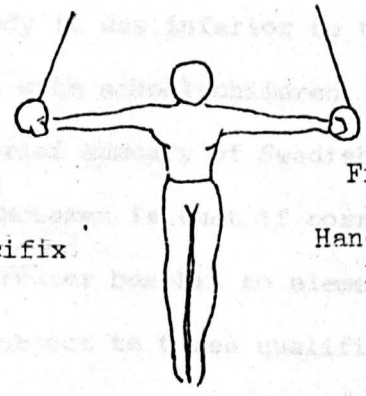
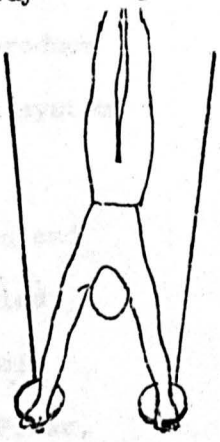


Fig.10

The crucifix p.239

Fig.11

Handstand p.240



Extracts from A. McLaren. A System of Physical Education. Oxford 1895.

McLaren arranged the exercises on standard pieces of German apparatus such as the horizontal beam, the vaulting bar, and the vaulting horse. In most cases the exercises were arranged progressively at four stages of difficulty. It would appear that the activities vary in difficulty between pieces of apparatus, the vaulting bar being more difficult than the horizontal beam. All the exercises shown for the bar would be beyond the ability of a large proportion of primary school children today.(37) On the other hand the first series of activities on the vaulting horse would be feasible for 11-12 year olds. Most of the second and third series vaults would be too difficult for children in this group without considerable practice. If children who were already strong and skilful tackled these activities, there would be a minimum amount of danger and they would eventually learn the skills. It is very unlikely that strength would emerge from performance. This would be in the nature of a pre-requisite rather than an outcome, and the most likely result would be an increase in gymnastic skill. Placed in the context of elementary schools in the 1880's German gymnastics would have been of doubtful value. The threshold of strength and agility required was too high in most cases. As an attempt to produce all-round development of the body it was inferior to the Swedish system when considered for application with school-children.

The conclusion from this brief summary of Swedish gymnastics and the German system advocated by McLaren is that if correctly applied the former would have been of greater benefit to elementary school-children. This conclusion is subject to three qualifications. First, McLaren saw gymnastics as only one part of an approach to total health,

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37. In McLaren's 1869 publication the section on the Vaulting Bar consisting of 10 exercises arranged in a progressive order of difficulty. Three of these are illustrated on page 62.

but he considered that Educational Exercise (a progressive, directed, and systematic approach to exercise) must exist alongside of Recreational Exercise (games and sports)(38) Swedish gymnastics developed in an entirely different society, and its advocates based their claims on one central idea, namely that an efficient body would more readily withstand stress and disease(39) McLaren's system would have been more relevant to Public Schools of that era with their declared interest in games, and as he makes clear in the long first chapter of 'Physical Education', his system had to be capable of serving both educational and military needs.(40) However, accepting that there were differences, it is also clear that the two systems had much in common. Both were concerned with health; both attempted to base exercises on physiological need; both were intended to be progressive; and both expected to produce all-round, even development. The decisive factor in favour of Swedish gymnastics is that the majority of the work could be graded to the needs of children ranging from weak and unfit to the well-fed and strong. Within every one of the ten sections of Swedish work there was a

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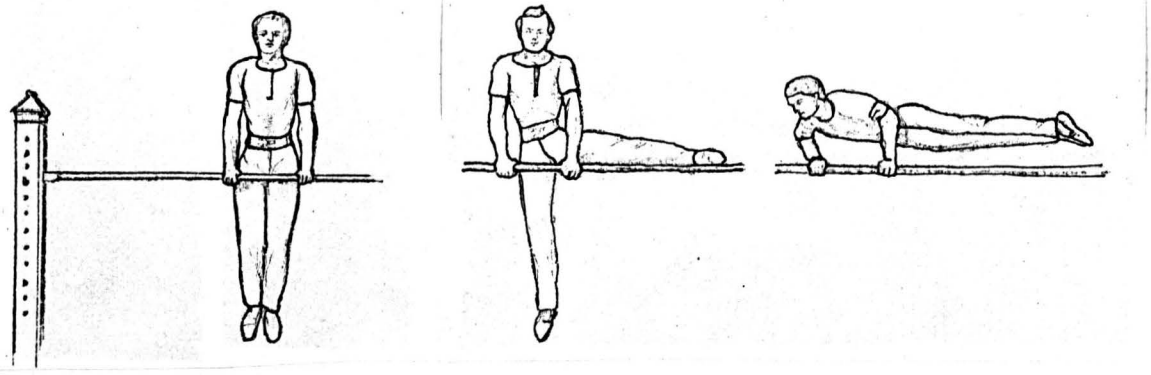
38. A. McLaren, Physical Education (London, 1869), XXXViii
"... it is health rather than strength that is the great requirement of modern men at modern occupations; it is not the power to travel great distances, carry great burdens, lift great weights, or over-come great material obstructions; it is simply that condition of the body, and that amount of vital capacity, which shall enable each man in his place to pursue his calling, and work on in his working life with the greatest amount of comfort to himself and usefulness to his fellow men."

39. N. Posse, Educational Gymnastics.(Boston, 1894), 3.
"The aim of gymnastics primarily is health... the object of the training is primarily health, we should first find out what the body needs to that end, and construct the exercises so that these needs will be filled". See also T.J. Surridge Mathias Roth (Manchester, 1974), appendix B. Educational gymnastics, by P.H. Ling (Upsala, 1834)

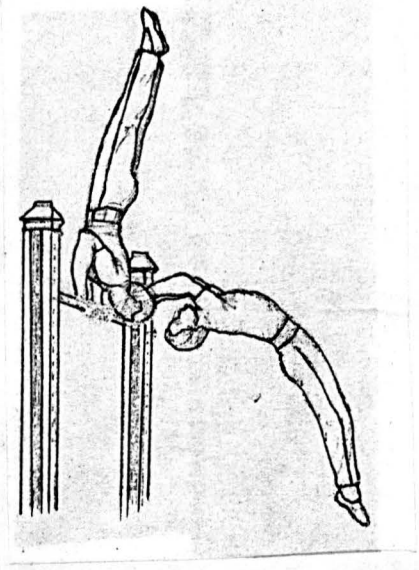
40. A. McLaren, Physical Education. (London, 1869), 64-94.

Fig. 1. Fig. 2. Fig. 3.



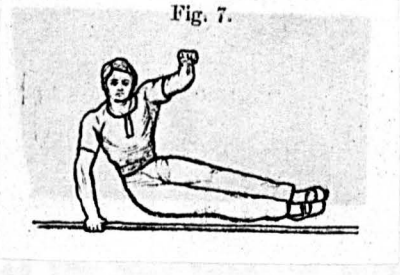
Exercise 1 (McLaren, 1869) 220. To vault over the bar in 3 movements.

Fig. 4. Fig. 5.



Exercise 4 (McLaren, 1869) 222. To vault over the bar by the back lift.

Fig. 7.



Exercise 10 (McLaren, 1869) 225. To vault the bar with one hand.

large number of simple, yet demanding exercises for weaker children. In McLaren's work the transition from the simpler to the more strenuous or complex skills was fairly rapid.

The second qualification is that for children who were starving, strenuous exercise over a prolonged period would have acted as another form of pressure. As will be shown subsequently, certain components such as glycogen are needed to sustain heavy exercise and in the case of children below a certain level of diet these elements would not have been present in the body in sufficient quantities. Heavy exercise maintained for more than a few minutes would have led to fainting.

The third, and fundamental qualification is that there is no substitute for an adequate diet. The idea that thin, weak children could be made big and strong purely through exercise was a fallacy. The additional claim that resistance to disease was related to strength was also a myth.

Whatever the qualifications, in the autumn of 1884 support grew for physical education as a means of off-setting over-pressure and promoting health. The Educational News devoted a leader article to the subject(41) but by April 1885 the S.E.D. had given no indication of its intention to amend the Schools (Scotland) Code in the light of Dr Browne's Report. In that month a national Conference on Health and Education was held in Manchester under the chairmanship of Lord Aberdare. The main theme was over-pressure, and four of the papers

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41. The Educational News, 8th November 1884. 733
"But when we regard it.. not as something producing external manners, but as the sole means of strengthening the muscles, of quickening respiration, of purifying the blood, of giving tone to the nervous system - in short, of exalting all the vital functions, and making the body a fit dwelling for the mind, then we cannot but hold that this subject of physical education is one of momentous importance... There still remains the necessity for systematic bodily exercise for the preservation and improvement of bodily health, the only sure foundation of healthy mental activity.

were on the subject of physical education. In one of these Dr Holm again sought support for Swedish gymnastics, and criticised apparatus-based German gymnastics. He suggested that the following criteria should be adopted, and argued that only Swedish gymnastics would meet them:

(a) That all gymnastic exercises should be devised with a due regard to the structure and functions of the body, and should therefore be founded on an accurate knowledge of anatomy and physiology.

(b) That every exercise should have a definite aim, and be localised, so that its action be understood.

(c) That every part of the body should be exercised in turn, and having due regard to physiological function, not any one part in excess of another.

(d) That harmony of function, including suppleness, should be regarded as of equal importance with the mere development of muscle power.

(e) That all exercises, while directed to the development of strength, should be kept well within the vital capacity of the individual."(42)

He added a cautionary word to the effect that no child who was under-fed should take part in any form of physical training.(43) As long as this precaution was observed physical training would not add to over-pressure "inasmuch as bodily action relieves and rests the tired brain".(44)

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42. T.C. Horsfall (editor), Proceedings of the Conference on Education Under Healthy Conditions. (Manchester, April 1885). J. Holm, Rational Gymnastic Training in its Relation to Healthy Education 207

43. ibid.

44. ibid, 206

Dr Charles Roberts in another paper returned to the question of exposing half-starved children to any form of pressure, whether it be physical or mental. His main point, however, was that physical education should be recognised as an important form of preventitive medicine, if properly supervised.(45)

In his summing up of the Conference, Lord Aberdare was extremely critical of the emotional language of Dr. Crichton-Browne's Report, and added that he had not been convinced by the medical evidence that nearly half the children in schools were suffering from over-pressure. He had been impressed by the testimony of medical experts on the question of physical education and considered that more time and attention should be paid to the subject. However his final conclusion was as follows.

> "I have no difficulty in saying that the charges which have been made generally in respect of over-pressure have been greatly exaggerated".(46)

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45. T.C. Horsfall, Education under Healthy Conditions. (Manchester, April 1885).
C. Roberts, The Medical Inspection of, and Physical Education in Schools.
> "Short sight, crooked spine, round shoulders, knock knees, flat foot, awkwardness of gait, and the like are very common, and probably on the increase in schools where physical training is neglected or ignored. Systematic physical training will prevent this class of deformities, but it will not remove them once they have become established, and recourse must be had to the surgeon for their correction and removal. This is a matter of the first importance, as cases of acquired deformity are more likely to be confirmed or made worse than corrected by gymnastic exercises".

46. T.C. Horsfall. Education under Healthy Conditions, (Manchester, April 1885), Lord Aberdare, 366.

The link between the Manchester conference and physical education in Scotland was made by William Jolly's(47) paper to the E.I.S. Annual Congress in January, 1886. "Altogether, at the recent Manchester Conference on "Education under Healthy Conditions", the concensus of opinion in favour of systematic bodily training in all schools was both abundant and powerful..."(48) He went on to advocate Ling's Swedish gymnastics as a counter to over-pressure, and recommended that the larger School Boards in Scotland should adopt the London School Board's system of employing Swedish instructors. However, despite the expressions of anxiety by various bodies about over-pressure, and the attempts to establish Swedish gymnastics as an antidote, the new Schools (Scotland) Code published in 1886 made no radical change in the status of physical education. Concern about national physique was not confined to the health of school children.

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47. William Jolly was appointed H.M.I. in 1868 after teaching English at George Watson's Hospital for the previous six years. He corresponded with McLaren who produced a scheme of physical training for schools for inclusion in Jolly's book 'The Public School'. Jolly was invited to read a paper on physical education at the British Association meeting held in Glasgow in 1876. In his annual report for 1874 Jolly included a long section dealing with the contribution of physical education to school health. He was the editor of the collected works of George Combe on education (Edinburgh, 1876).

48. The Educational News, 30th January 1886:

Just before 'over-pressure' began to appear as an issue in the educational Press the Earl of Meath produced an article about physical deterioration.(49) He was concerned primarily about the debilitating effect of a slum environment and the accompanying levels of starvation and disease.(50) He made comparisons with other countries and called on the Government to introduce compulsory physical education in schools and to provide school meals in poorer areas. Over the next few years he travelled extensively in Europe and America and made a study of various systems of physical training. Without having any factual information he nevertheless became convinced that as well as unfitness, there was a gradual trend towards physical deterioration. in towns. He turned for confirmation to the only available source of statistics and claimed that out of 64,000 men who had applied for entry to the Army in 1884, 30,000 failed the medical examination.(51) Three months after Meath's article appeared Sir Thomas Crawford, Director General of the Army Medical Department reported that the rejection rate was increasing annually.(52) He concluded that

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49. Reginald Brabazon, twelfth Earl of Meath (1841-1929). Served in diplomatic service until 1877 when he retired to pursue philantrophic work. Founded Holiday Saturday Fund Committee; Dublin Hospital Sunday movement; he was first chairman of the Young Men's Friendly Society; he founded the Metropolitan Public Gardens Association and sat on the London County Council from 1889 to 1892 and 1898 to 1901 during which he was the first chairman of its parks committee. He was founder and first president of the Lads' Drill Association and chief commissioner of the Boy Scouts in Ireland. Author of Social Arrows (1886) and Social Aims (1893). D.N.B.

50. Lord Brabazon, "Health and Physique of our City Populations". Nineteenth Century. Vol. 10. July-December 1881, 80-90.

51. Lord Brabazon, "Decay of Bodily Strength in Towns". Nineteenth Century. Vol. 21. January-June 1887, 673-676.

"...there is evidence of perceptible deterioration or degradation of type in the lower order of the people".

His explanation of this problem was that a growing proportion of applicants were coming from city slums where disease was gradually eroding health and physique. Many of the applicants were hungry and unemployed since Britain was, at that point, in the grip of an economic depression.

Crawford's statistics were challenged immediately by Charles Roberts for reasons which were repeated some fifteen years later when physical deterioration had become a major political issue. He pointed out that when a larger number of men was required, a lower entry standard was allowed to operate,(53) and in 1882 applications had come from individuals further down the social scale than had been normal in earlier years. He suggested that the attractions of Army service varied from time to time according to supply and demand in other occupations,(54) and also that it was difficult to make comparisons between periods because the state of medical knowledge was constantly changing.

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52. Sir Thomas Crawford, "Devolution and Evolution". The British Medical Journal. 13 August 1887, 337-338. He analysed the various physical ailments under 42 separate categories. He compared the number of rejections for 1860-64 when 86,969 men were examined and for 1882-86 when 318, 981 applied. The rate of rejections for the first period was 37 per cent and 41.5 per cent for the later period.

53. This point was proved in the later years of the 1914-18 War when millions of lives had been lost. Gilbert points out that the level of rejections for the largest cities was higher than the national average, and "in the last year of the war (when) requirements were lowest". B.B. Gilbert, The Evolution of National Insurance in Great Britain. (Joseph, 1973), 86. F.n.

54. C. Roberts, "The physical Conditions of the Masses". Fortnightly Review, xlii (N.S.) 1887.
"The police and fire-brigades, the building trades and the iron industries, the railways and the docks, have been the first choice of the strong men whom agriculture does not want or cannot retain, while the facilities for emigration drain off a large number of the able-bodied and enterprising members of the working classes."487.

These observations made it difficult to estimate whether the health and physique of recruits for the Army could be taken as indicative of national standards. In fact, Roberts came to an exactly opposite conclusion for Meath and Crawford, namely that due to the advance in medical knowledge, the health and physique of the nation was actually improving.(55) This controversy co-incided with publication of the first of Charles Booth's reports on the nature and extent of poverty in London.(56) Booth concluded that 35 per cent of those examined were living on or below the poverty line and that there was a direct relationship between poverty and poor health.

The Government resisted all pressure from the medical and teaching professions and from individuals like Meath to the extent that when the London School Board announced their intention to include physical education in the curriculum, the Board of Education threatened legal action.(57) Meath's attempts to introduce legislation in the House of Lords failed in 1890, and again in 1891(58) and it was not

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55. G.F. Shee, "The Deterioration in the National Physique". Nineteenth Century. Vol. 53. May 1903, 798-799.
Shee suggested that valid comparisons could only be made in nations which had adopted conscription. The whole of the male population was then examined for national service. He claimed that available figures for the British Army showed a progressive drop in entrance standards and suggested that these were forced upon the Army due to non-availability of men of adequate physique. For example the minimum height dropped from 5ft. 6in. in 1845 to 5ft. 5in. in 1872; to 5ft. 3in. in 1883 to 5ft. 2in. in 1897 and to 5ft. Oin. in 1900. Similarly the minimum chest measurement was reduced from 34in. to 33in. in 1883. Although there was no minimum weight standard, the average weight of those accepted fell steadily between 1871 and 1900. The number per 1000 weighing less than 8st. 81b for various years was as follows: 1871 - 159.4; 1872 - 174.4; 1898 - 269; and 1900 - 301. In 1900, 44 per thousand weighed less than 7st. 121b.

56. T. and B. Simey, Charles Booth, Social Scientist.(London, 1960)

57. R.C.P.T., (1903), 11,338, para 8403.

58. Lord Brabazon (Earl of Meath), "Physical Education". The National Review, xx. December 1892, 461-467.
Meath proposed that no school in a town with a population over 16,000 should receive the higher grant unless physical education was one of its compulsory subjects.

until 1895 that the Schools Codes for Scotland and England were altered to recognise some form of physical education.(59) Even then it was in the context of discipline, and the relationship of exercise and health had still not been accepted officially.

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59. The Lads Drill Association. (1903), opus cit, 5.
In an interview with Meath, Acland the Vice-President for Education "... stated that he not only saw no objection to the proposal made by him that boys should be drilled, but that on the contrary he himself would put into the new Education Code a clause permitting such instruction. The words of Lord Meath's Bill of 1890, with the exception of the clause limiting the operation of the Act to towns with a population over 16,000 were therefore incorporated in the Education Code of 1895 ..."

This account is the first satisfactory explanation of why the Government chose to include this clause in the 1895 Code. It has been assumed that the decision was a response to the gradual spread of teachers courses both in Scotland and in England. Meath's conversation with Acland may simply have confirmed a previous intention to press physical training on School Board, but the fact that the wording of the article corresponds to Meath's earlier Bills suggests that his influence was quite strong.

CHAPTER 4

PRIVATE SCHOOLS AND PHYSICAL EDUCATION

Private boarding schools became popular in Scotland after the main period of growth had passed in England. The Scottish schools avoided the worst excesses of athleticism, but games developed as an important part of school life. A radical scheme of physical education, giving considerable emphasis to vigorous exercise, controlled diet and medical supervision, started at Loretto School and spread gradually, first to other boarding schools and later to the leading day schools. The author and main propagandist for this system was H.H. Almond (1) owner-headmaster of Loretto School from 1862 to 1902.

In the early part of the 19th century, staff at English boarding schools made no attempt to control or direct pupils' leisure time. (2) Various writers have shown that senior pupils were able to establish a rule of tyranny over younger boys (3) and there were major problems of discipline, which eventually forced

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1. H.H. Almond 1832-1903. Glasgow Univ. 1845-50, Balliol College, Oxford 1850-55, Master at Loretto 1857-58, Master at Merchiston 1858-62, Headmaster at Loretto 1862-1902. Author of Sermons of a Lay Headmaster, (Edinburgh, 1892).

   E.C. Mack describes him as "probably the greatest progressive educator between Thring and Sanderson" (E.C. Mack, Public Schools and British Opinion since 1860. (New York, 1973), 123 f.n.)

2. T.W. Bamford, The Rise of the Public Schools. (London, 1967), 77. "The use of leisure has always been immensely important. The old headmasters considered that the freedom of a boy to use his leisure as he wanted outside the classroom and beyond the master's eye was not only a right but essential to a growing independent spirit".

3. T.W. Bamford, The Public Schools, 1967, 78
   "This freedom may have been one of the glories of public school life, but it also had its undesirable side, as the schoolboy novels tell. It guaranteed privacy and therefore provided the perfect environment for gang warfare and sexual perversion. It gave ample opportunity for the bully to make the life of the timid very unpleasant indeed".

school authorities to try to find ways of occupying pupils in worthwhile activity. A system of boy-government in which prefects were given considerable authority was the first main reform. Second, masters became much more involved in the organisation of games and time was allocated in school time-tables for attendance at games. The old countryside activities of hunting squirrels and foxes, bird-watching and rambling gradually gave way to a programme of organised games which left very little freedom of choice. More attention was given to results of matches and successful games players became objects of hero-worship. Manliness was seen to be more important than learning (4) and approval was given to the large amount of time spent at games. (5) In the conflict of values between academic achievement and athletic success, the latter was given greater priority. Members of school teams spent two or three hours every day practising or competing and masters were recruited as much for their playing ability as for skill in teaching. By 1870

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4. D. Newsome, Godliness and Good Learning. (London, 1961), 216 Newsome suggests that athleticism is represented by the following values:
"...the duty of patriotism; the moral and physical beauty of athleticism, the salutory effects of Spartan habits and discipline, the cultivation of all that is masculine, and the expulsion of all that is effeminate, un-English and excessively intellectual".

5. Royal Commission on Revenue and Management of Certain Schools and Colleges. (Public Schools Commission) 1864, BPP, 1864, XX, 1, 56.
"It is not easy to estimate the degree in which the English people are indebted to these schools for the qualities on which they pique themselves most - for their capacity to govern others and control themselves, their aptitude for combining freedom with order, their public spirit, their vigour and manliness of character, their strong but notslavish respect for public opinion, their love of healthy sports and exercise. These schools have been the chief nurseries of our statesmen; and they have had perhaps the largest share in moulding the character of an English gentleman".

athleticism and anti-intellectualism had become the dominant values in English public schools. (6) This ideology was revealed in school songs, magazines, novels and comics of the period, and Mangan gives many examples of the extent to which the playing field was seen as a preparation ground for life. (7) The experience of football or cricket acted as a form of socialisation into a way of life based on simple but inflexible codes of behaviour. Although athleticism swept through the Public Schools, in retrospect it can be seen as an over-reaction to the earlier problems, and it resulted in a kind of Philistinism. (8)

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6. B. Simon and I. Bradley (editors), The Victorian Public School. (Dublin, 1975). J.A. Mangan, "Athleticism: A case Study of the Evolution of An Educational Ideology", 166
"...games fanaticismat Marlborough was pronounced, heavily involved the majority, and this involvement was underpinned and legitimated by a powerful and explicitly formulated educational rationale. In the main, during their years at Marlborough, many boys played rather than studied or prayed. In this respect the college conformed thoroughly to the contemporary stereotype of the English public school".

7. J.A. Mangan, "Play Up and Play the Game: Victorian and Edwardian Public School Vocabularies of Motive". Brit. Journal of Educ. Studies. XXIII, 3 October 1975, 324-335. Mangan quotes J.E.C. Welldon, Forty Years On, (London, 1935), 112
"Everybody knows that there are certain actions which an honourable English gentleman will not commit. He will hate whatever is mean, fraudulent or disingenuous. According to a well-known phrase, which in itself may be taken as symbolical of English life, he will always and everywhere 'play the game'".

8. B. Simon and I. Bradley, Victorian Public School. (Dublin, 1975). Introduction, 8.
"As the religion of athletics achieves its full development in the closing decades of the Victorian period, it seems the perfect expression of a philistine age".

There was a much smaller demand for boarding schools in Scotland, and an investigation of residential Hospital schools carried out in 1869 came out strongly in favour of day schools. (9) Fettes College was the only new boarding school built in Scotland after 1850. Scottish boarding schools were small in comparison with similar schools in England and fewer in number. In 1870 the combined rolls of Glenalmond, Fettes, Loretto and Merchiston included approximately 200 boarders, compared with 7,500 boarders at the seven major English public schools and twenty-five other residential middle-class schools. (10) The Argyll Commission reported in 1868 that the majority of private schools in Scotland were non-residential. The typical school was small and was conducted in a private house in the middle of a town (11) whereas boarding schools were normally situated in the open countryside.

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9. S. Laurie, Reports on the Hospitals under the Administration of the Merchant Company of Edinburgh, and General Remarks on Hospital Training (Edinburgh, 1869).

10. Each of the Scottish schools publishes a School Register, giving names of all pupils known to have attended the school.

11. N. Hans, New Trends in Education in the Eighteenth Century. (London, 1951). A. Law, Education in Edinburgh in the Eighteenth Century. (London, 1965). L.J. Saunders, Scottish Democracy. (London, 1950).
It is clear that in the late 18th century and the first half of the 19th century there was a sizeable network of these small private schools, particularly for girls. For a description of how a child from a wealthy family moved from the smaller schools to the Edinburgh Academy before going on to an English school specialising in preparing pupils for the Army, see General Sir Aylmer Haldane, A Soldier's Saga. (Edinburgh, 1948), 2-18.

Although the Assistant Commissioners, T. Harvey and A. Sellar, were satisfied that the boarding schools were looking after the health of their pupils, they expressed some reservations about the growing amount of time and energy allocated to games. (12) In comparison to English schools the time spent on games was actually fairly modest. There were two main differences in the approach to physical education in English and Scottish boarding schools. First the Scottish schools gave much more emphasis to inter-school competition (13) and second, a more scientific approach to health was adopted in Scotland. The latter point is perhaps more relevant to the present study and deserves more detailed consideration.

The leading advocate in Scotland of this scientific approach to physical education was H.H. Almond, headmaster of Loretto School from 1862-1902. His work and influence will be considered in the following section as an illustration of how these ideas operated in practice. In the mid-1860's Almond began to try applying the ideas which he encountered in the writings of Herbert Spencer, J.S. Mill

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12. Royal Commission on Education (Scotland) (Argyll Commission) Third Report, Burgh and Middle Class Schools, 1868. BPP, 1867-68,XXIX. Appendix. Report by the Assistant Commissioners, Thomas Harvey and A.C. Sellar, 177.
"Kept within due bounds, these games are of the utmost value. Their legitimate use is to promote the health of the boys, to give them an interest in what they are doing while gaining health and vigour, to counteract the tendency to over-study, and to remove all pretence for the lounging and listlessness of indolent boys. The result of our inquiries on this point was that, on the whole, games have been made subservient in Scottish Boarding Schools to these important ends, but that there was a growing tendency to set too great value upon them; to multiply them beyond reasonable bounds; to put the captain of the eleven on a level with the dux of the school; and to rank the laborious pursuit of pleasure as high as the self-denial required for intellectual study and improvement".

13. I. Thomson, Physical Education in Scotland. 1969, Chapter 7. Between 1862 and 1873 an elaborate system of championships developed in fencing (1862), athletics (1866), gymnastics (1867), rifle-shooting (1869), cricket (1870) and rugby football (1873). Entry was restricted to the major boarding schools; (Blairlodge, Craigmount, Fettes, Glenalmond, Loretto and Merchiston) the leading day schools (the Edinburgh Academy, Royal High School, Daniel Steqart's and George Watson's); and, where appropriate as in fencing and gymnastics, to some of the preparatory schools.

and Archibald McLaren.* He ascribed to Spencer the credit for persuading him that his first duty was to produce pupils who would be 'good animals'. (14) He frequently referred to the body as 'the human machine' and quickly concluded that the following aspects of McLaren's system of rational physical education were suited to Loretto. First, McLaren considered that games only developed certain parts of the body and systematic (or 'educational') exercise was required to compensate for this imbalance. (15) Almond employed a teacher of gymnastics at Loretto throughout the whole of his career as headmaster to ensure all round development of the body. Second, McLaren argued that correct diet was a prerequisite to successful physical education. (16) The meals at Loretto were lavish by contemporary standards, but eating between meals was absolutely forbidden. McLaren was a pioneer in the use of physical measurements to record the effects of physical education (17), and Almond instituted a system whereby every boy was measured twice each year. If the chest measurement was much below the average, an additional examination was called for, and Almond took many ailing pupils to his cottage at Loch Inver in Sutherlandshire. In these three ways McLaren and Almond anticipated the basis of the eventual national system of physical education for State schools. McLaren's writings suggest that he would have placed more emphasis on educational exercise, whereas the following quotation indicates Almond's undoubted preference for games:

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14. R.J. MacKenzie, Almond of Loretto. (Edinburgh, 1906), 291

15. A. McLaren, Physical Education. 1869, XXVIII

16. A. McLaren, "Systematised Exercise", MacMillans Magazine. November 1860 and "National Systems of Bodily Exercise", MacMillans Magazine. February 1863.

17. A. McLaren, Physical Education. 1869, Appendix E

* see Chapter 3 for a description of McLaren's system.

> "But the centre and mainspring of physical education in our public schools must continue to be those great games - the organised growth of centuries - which not only supply to most the prime necessities of exercise and recreation, but promote many desirable qualities of character" (18)

McLaren had outlined the wider aspects of the system adopted by Almond in an article published in February 1863, before these reforms had been instituted at Loretto. He covered diet, ventilation of dormitories and class-rooms, personal hygiene, dress, hours of study, the balance between academic and physical activities, and active exercise. (19) He also argued for the unity of mind and body about which Almond so frequently preached some twenty years later. It would appear that McLaren was the originator of many of the ideas which Almond put into practice over a period of forty years. (20)

Almond's influence was not confined to Loretto. Through school sports he came in regular contact with staff at other schools, and staff tended to move from one school to another. Fettes and Merchiston were situated in Edinburgh and Loretto was only three miles outside the city boundary. The largest boarding

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18. H.H. Almond, "Athletics and Education", MacMillans Magazine. February 1881.

19. A. McLaren, "National Systems of Bodily Exercise". MacMillans Magazine. February 1863, 384.

20. Although Almond admitted to having been influenced both by Spencer and by McLaren it is not clear when he first read their work. In 1900 he wrote to Spencer suggesting that the system at Loretto was based on Spencer's ideas, but MacKenzie insists that the system was fully established before he read them. Spencer's work preceded McLaren's 1863 article and once more one cannot say with certainty whether Almond read the latter before instituting his reforms at Loretto. It was not until 1881 (Athletics and Education) and 1886 (The Lorettonian, 30 January 1886) that he mentioned McLaren's influence on him. However, there are similarities in the language of McLaren's 1863 article and Almond's letters in the earlier period.

school, Glenalmond, was about 50 miles from Edinburgh and it was therefore possible to maintain contact between schools. (21) Rogerson, headmaster at Merchiston from 1863 till 1898, was a member of staff when Almond taught at Merchiston between 1858 and 1862. Wilfred Richmond was employed at Loretto before his appointment as Warden at Glenalmond in 1881. (22) C.C. Cotterill, who supervised games at Fettes, was a close friend of Almond and turned to him for advice in the production of a book entitled "Suggested Reforms in Public Schools". (23) Cotterill was on the Fettes staff from 1870-1890, and it was he who persuaded the headmaster to follow Almond's lead by insisting that boys should change into flannel clothes for games. When James Cooke Grey purchased Blairlodge, near Polmont, in 1874, numbers were low and there was no system of physical education. A former teacher at Loretto, Grey erected a large gymnasium and swimming pool, laid out playing fields, and began to build up cricket and football fixtures with the other schools. (24) By 1883 Grey had established a replica of the Loretto system and Blairlodge was the largest boarding school in Scotland. Perhaps due to this movement of staff from school to school, a common

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21. Glenalmond's first football match against Fettes was played in 1882. According to the official "History of Glenalmond", (Edinburgh, 1956), the journey to Musselburgh for the first match against Loretto took 6 hours, and involved an open coach, train, boat-ferry and another train.

22. Glenalmond faced considerable financial difficulties between 1873 and 1883. In 1873 they offered Almond the post of Warden (see R.L. McKenzie, Almond, 1906, 112) but he turned it down. One of the first measures Richmond took after his appointment in 1881 was to institute a system of compulsory physical education based on the Loretto model. (History of Glenalmond. 1956, 110).

23. C.C. Cotterill, Suggested Reforms in Public Schools. (Edinburgh, 1885). Gymnastics was made compulsory for the whole school as from 1872. (ref. Fifty Years of Fettes 1870-1920. (Edinburgh, 1931), 31).

24. "Blairlodge School". Stirling, Falkirk and District Illustrated Review, 1893.

pattern emerged in the boarding schools which, in addition to compulsory games, included regular medical examination, gymnastics, and a carefully supervised diet. (25) Gymnastics was compulsory at all the boarding schools, and Blairlodge employed three full-time gymnastics instructors.

The private day schools increasingly found themselves competing with each other and with the boarding schools, for fee-paying pupils. The Edinburgh Academy in particular, found that enrolments were dwindling, and in 1888 when Thomas Harvey (26) retired as rector, the Directors took stock of the situation. The Merchant Company schools were able, through their large endowments, to offer secondary education in large spacious builings at a quarter of the fees charged by The Academy. (27) The Heriot Trust had been re-organised in 1886 and the school was growing rapidly. (28) The Parker Committee, which reported in 1888,had come out strongly in favour of government grants for local authority secondary education. (29) These various developments indicated a

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25. ibid, 5.
The diet at Blairlodge in 1888 was as follows:-

6.45am	porridge and milk
7.45am	meat, eggs, fish or bacon, hot rolls or toast and butter, tea, coffee or milk
11.15am	biscuits or rolls
1.50pm	soup or fish, meat and vegtables, pudding
5.15pm	bread, butter and jam
8.00pm	light pudding or porridge, or bread and cheese

26. Thomas Harvey: 1823-1901. Master at the Edinburgh Academy 1847-56, Headmaster, Merchiston Castle School 1856-63, Assistant Commissioner, Argyll Commission 1864-68, Rector, the Edinburgh Academy 1869-88.

27. Endowed Schools Commission (Scotland) 1873. First Report. BPP, 1873. XVI, Appendix 1. 538.
In September 1870 before the Hospitals were converted into day schools the Merchant Company were employing 26 staff and educating 394 pupils. The corresponding figures for the following session were 213 and 4592.

28. In 1886 400 boys enrolled and the school roll in 1887 was 700. By 1890 this had levelled out at over 1000 boys.

29. Departmental Committee on Education in Scotland. 1888. Third Report. BPP, 1888, XII.

probable expansion in cheaper forms of secondary education and the Directors of The Edinburgh Academy had to offer an attractive package to try to stem the drop in school numbers. They decided to appoint R.J. MacKenzie as Rector and asked him to undertake the re-organisation of the school. (30) Within twelve months a Preparatory School was built and opened; the size of classes in the upper school was reduced to thirty; modern subjects were introduced; two new boarding houses were planned and built on the additional playing fields which he sought and acquired; and a conscious decision was made to bring The Academy closer in line with a Public School model.

The first five masters appointed by MacKenzie were Englishmen with Public School and English University backgrounds. A school gymnasium was opened in 1890; an Army sergeant was appointed as chief gymnastic instructor and he and his assistant took charge of Preparatory and Upper school physical training, which was made compulsory in 1889-90. (31) In 1891 MacKenzie announced that in addition to two hours of compulsory physical training each week, every boy would participate three afternoons each week either in games or drill and gymnastics. The older boys would be supervised by the prefects and the juniors by the new masters. MacKenzie later admitted that these ideas were taken from the Loretto system (32)

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30. R.J. MacKenzie: 1857-1912. Loretto School 1866-1876, Keble College, Oxford, Master at Loretto 1881-82, Master at Clifton College 1882-88, Rector at The Edinburgh Academy 1888-1901; Author of Almond of Loretto, 1906.

31. Glasgow Academy had introduced compulsory physical training in 1877 but the Edinburgh Academy was the first day school in Edinburgh to enforce attendance at physical training during school hours. In 1891 the first annual Gymnastics Display attracted an audience of 1500 parents, teachers and pupils.

32. R.J. MacKenzie, Almond of Loretto. 1906, 243.
"With regard to the Edinburgh Academy the writer may be permitted to state that the physical system introduced there about the year 1890 was no more than the application of Almond's ideas to the problems of day-school life".

and he made his reasons clear in 1891 when seeking permission from the Directors to acquire new playing fields:

> "...the ideal of a school able to compete with the Boarding Schools, and more than able to compete with the Day Schools in respect of Physical Education" (33)

These measures were successful in stemming the fall in enrolments, and during MacKenzie's thirteen years as Rector, numbers increased to a point which had not been surpassed in the fifty years preceding his appointment. The Merchant Company schools in Edinburgh, and Glasgow Academy, Alan Glen's and Hutcheson's in Glasgow all followed the pattern set by The Edinburgh Academy. Indoor facilities for drill and gymnastics were built, instructors were employed, and playing fields were rented or purchased. Instructors were employed to take drill and gymnastics, and teachers were not expected to undertake these duties except in connection with Cadet Corps. Drill sergeants were not permitted to take part in the organisation or coaching of games, but it was quite normal for a professional to be employed for cricket coaching. In some cases, for example at Heriot's, it was the Former Pupil's Club who employed the professional, and in others, as at The Edinburgh Academy, the school made the appointment. In the same way the Former Pupils' Club co-operated in the provision and management of playing fields. (34) Despite the very rapid growth of State

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33. Rector's Report. The Edinburgh Academy, 1891.

34. J. Thomson, A History of Daniel Stewarts College, 1855-1955. (Edinburgh, 1971).
The Merchant Company purchased ground and laid out playing fields at Myreside and Inverleith for the use of the school and the Former Pupils' Club. At The Edinburgh Academy and Glasgow Academy, it was the Club who took the initiative and subsequently offered facilities to the school.

secondary education from about 1895, the private middle class day school maintained their position and continued to offer an education which placed considerable emphasis on physical education.

Almond was a member of the Musselburgh School Board for twenty years but according to his biographer he met with little success in attempting to persuade the Board to introduce physical education. (35) From the selection of letters and articles which MacKenzie reproduced, it is clear that Almond was a tireless propagandist on this subject. When evidence of unfitness among Army recruits was revealed during the Boer War he called for an immediate improvement in school physical education, including provision of gymnasia in Board Schools. (36) He and several other headmasters and teachers in private schools were invited to give evidence to the Royal Commission on Physical Training, and all stressed the importance of games, an adequate diet, and exercise. (37) The Commission recognised the value of games in these schools, but in their main recommendations for Board School pupils they concentrated on medical supervision, a national system of physical education and provision of school meals.

The Commission considered that physical education in elementary schools was inadequate in comparison with Higher Class schools. Making every allowance for the differences in parental attitudes and economic status, the Commission nevertheless concluded that the basic problem consisted of a wrong conception of the purpose of

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35. R.J. MacKenzie, Almond of Loretto. 1906, 249.

36. H.H. Almond, "The Breed of Man". Nineteenth Century, 48, October 1900.

37. R.C.P.T. (1903), 1, Report, p.11, para 35
"We are disposed to give great weight to the evidence tendered by many competent witnesses as to the high value of the great school games..."
ibid, p.30, para 162.
"They (various witnesses) were unanimously of opinion that it was most desirable that increased attention should be paid to the feeding of children attending the State-aided schools".

elementary education. They suggested that "unquestionably a new conception of education must be formed", (38) and "so far as physical training consists in systematic physical drill, we think it should be an integral part of the school curriculum." (39) Perhaps the main contribution of the private fee-paying schools was to offer a model which guided the Commission, by displaying the compatibility of mental and physical aspects of the curriculum. They accepted that in the private sector approach, these two forms of education were seen to be of equal importance and they concluded:

> "There might be less book work done from day to day, but we are convinced that the result of such a system, after a course of years, would give better intellectual results, while the moral and physical aspects of education, which are now pushed aside, would be advanced by such a process" (40)

It would appear that any influence the private schools had on State schools was indirect, and there is little evidence to suggest that headmasters of private schools actively attempted to alter the content of the curriculum in Board schools. However the Higher Grade schools, dealing with older pupils, were given facilities and staff to promote systematic physical training and they quickly set out to establish a system of inter-school sport

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38. ibid, 17, para 72

39. ibid, 19, para 85

40. ibid, 19, para 82

along similar lines to the private schools. (41) Whereas games were given pride of place in private schools, they took place out of school hours in State schools. The two systems did however share a common concern with health, and in terms of the curriculum this took the form of gymnastics.

From 1862 until 1882 Almond was closely involved in the daily management of Loretto school, and he also took an active part in the supervision of games. In 1882 his mother died and this proved to be a turning point in his life. His biographer wrote:

> "Some change of constitution, the result of long over-work, occurred at this time, which rendered him, for the remainder of his life, unable to endure those strains which men of tougher fibre and less imaginative temperament support without difficulty."(42)

Thereafter he spent an increasing amount of his time at his Highland cottage at Loch Inver, and much of his energy was directed into trying to persuade others of the value of physical education. His career therefore falls into two halves and any assessment of his contribution must recognise this. Before 1882 he created a form of education based on "character, physique, intelligence, manners and information" (43) and the medium for character (his highest priority) was games. He avoided the excess of adulation for outstanding athletes, however, and in so doing ensured that athleticism never became a problem at Loretto. Almond was guilty

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41. Edinburgh School Board. Minutes 1908, 183-233. "Report by David McNally on Games and Athletics in the Board Schools of Edinburgh". See Appendix 4 "Games in Edinburgh Schools".

42. R.J. MacKenzie, Almond of Loretto. (London, 1906), 120.

43. ibid, 157.

of making unsubstantiated claims for the potential influence of football, and in retrospect it appears that the moral effects of games sprang instead from his own re-iteration of principles which he believed wrongly to be an intrinsic part of football. He considered that the simple act of taking part in games would inevitably lead to a kind of self knowledge, and that courage would be developed on the playing-field. He did not question the notion of a transfer from games to life. But in a small school in which he played the combined roles of teacher, parent and preacher his own influence on and off the field was probably more important than any single experience. He took part in games, composed sermons on the subject of purity (44) and turned health into a kind of religion. His aim was to turn out successive generations of missionaries in the cause of health, and he made every effort to persuade other private schools to follow his lead.

After 1882 Almond turned his attention to a wider public and poured out a steady stream of letters and articles to the Press. MacKenzie reproduced many of them, ranging from advice to former pupils, to letters to Lord Balfour, Secretary of State for Scotland. Almond was the leading propagandist for physical education in Scotland and although his influence cannot be measured precisely, it seems reasonable to suggest that like General Chapman, he helped to create a climate of opinion which recognised that in certain situations physical education could make an important contribution to health.

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44. H.H. Almond, Sermons of a Lay Headmaster. (Edinburgh, 1886).

CHAPTER 5

Official Investigations

A large number of potential recruits for the Army were rejected during the Boer War as physically unfit. Thereafter reports of grinding poverty assumed new significance, since it was claimed that there was a relationship between poverty, ill-health and poor physique. The condition of the people was a major political issue. 'National efficiency' grew into a popular political slogan, because how could a successful imperialist nation expect to recruit its army and navy from a race of people who were physically unfit and degenerate? The health of school children became a matter of wide public concern, and out of this debate a new role emerged for physical education in schools.

Even before the Boer War, in the 1880's and 1890's, two problems of city life forced themselves upon public attention. First, unemployment led to rioting in London, which, to quote Gilbert, "altered for ever the relations between the two worlds of the British nation".(1) Second, a pamphlet about working class housing, 'The Bitter Cry of Outcast London' appeared in 1883 which, again to quote Gilbert, was "perhaps the most influential piece of writing about the poor that England has ever seen".(2) Its author, Andrew Mearns, described the purely physical problems such as poor ventilation and inadequate sanitation, and stated that in these conditions incest was not uncommon. Wohl commented:-

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1. B.B. Gilbert, National Insurance. (London, 1966), 32.

2. ibid. 28.

"That sins condemned in savages were being committed in the centre of the Empire came as a great shock to many Victorians and spurred them to reform activity". (3)

Mearns' pamphlet was written in dramatic emotional language. Other medical investigators wrote similarly. In Glasgow James B. Russell, the city's Medical Officer of Health, also catalogued both in statistical terms and in eloquent colourful prose the impact of over-crowding and alcohol on the health of slum dwellers. (4) Of all the investigations into urban living, however, the greatest and most systematic was not by a medical investigator but by Charles Booth, whose first report on London was published in 1887. (5) Booth demonstrated that the numbers living below the poverty line were so vast that philantrophy could no longer be expected to deal with the problem. Despite his, and others evidence little was done in the form of State action to tackle poverty comprehensively. The Trades Unions campaigned for reform;(6) the Settlement movement was able to recruit fresh volunteers; and housing was made a major political issue.(7) Nevertheless, the problems of poverty and unemployment remained when the Boer War began in October 1899.

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3. For the background see A. Wohl, an Introduction to A Mearns, The Bitter Cry of Outcast London. 1883, reprinted by the Victorian Library, (Leicester University Press, 1970).

4. A.K. Chalmers, (editor) A Memorial Volume of the Writings of James B. Russell. (Glasgow, 1905).

5. T.S. and M.B. Simey, Charles Booth, Social Scientist. (London, 1960).

6. B. Simon, Education and the Labour Movement 1870-1920. (London, 1965).

7. A Royal Commission on the Housing of the Working Class was appointed in 1884.

During the first six months of the War, the British forces in South Africa suffered a series of reverses. (8) Thereafter victories were welcomed in Britain by spontaneous marches and demonstrations in the streets of larger cities, and the Government was swept back into power in October 1900 with a massive majority over the Liberals. 'The condition of the people' as a social and political issue might have been submerged in an 'orgy of imperialism' but calls for Liberal action came from two quite different sources, though both drew attention to the problem of physical unfitness.

C.F. Masterman and several of his friends from Cambridge had established a settlement in the East End of London, and their proposals for reform sprang from first hand experience of poverty.(9) In their book, 'The Heart of the Empire' they described the typical town dweller as 'stunted, narrow chested, easily wearied'. They called for more State action and control in the interests of greater social justice for all(10) Although some of the reforms which Masterman's group proposed coincided with the Liberal programme between 1905 and 1914, he concluded in 1909 that the main obstacle to progress was imperialism -

"---- the lust of domination, the stir of battle, the pride of magnitude of Empire". (11)

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8. G.A. Searle, The Quest for National Efficiency. (London, 1971).

9. C.F.G. Masterman, The Heart of the Empire.(London, 1901). Reprinted 1973 by the Harvest Press with an Introduction by B.B. Gilbert.

10. ibid. Introduction, xix
"The Heart of the Empire was an appeal by younger Liberals to the party of Gladstone to bring itself into the twentieth century, to recognise that political freedom without economic security meant little and to remember that imperial dominion must be supported by an imperial race." xix

11. C.F.G. Masterman, The Condition of England. 1909 revised edition (London, 1960), with an introduction by J.T. Boulton. xx-xxi.

Lord Rosebery adopted a different approach. Unlike Masterman, Rosebery was not opposed to imperialism, but he argued that a large Empire required a fit and efficient people. (12) In Britain on all sides he found evidence of decline, inefficiency and physical degeneration. Initially it appeared that Rosebery had substantial support for his slogan of 'national efficiency', including Haldane, Gray and Asquith, all of whom were influential members of the Liberal Party. Searle has shown that Rosebery's challenge to Campbell-Bannerman's leadership petered out, but not before a substantial group of Liberals had accepted the premise that a successful imperialist nation must adopt measures to maintain minimum standards of health and economic security. (13) Sydney Webb was a prominent member of the small group who had supported Rosebery and as Gilbert points out "established the principle that the true imperialist must be a social reformer". (14) Although a party committed to national efficiency was virtually still-born, the concept of imperialism had undergone a significant change. It would to some extent be limited in future by consideration of the condition of the people from whom military forces were recruited.

Within a year of the outbreak of War in South Africa there were rumours that large numbers of men were being turned away by the recruiting officers. A.E. White quoted the instance of the Manchester

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12. Lord Rosebery, Miscellanies. Vol. 11. Glasgow University Rectorial Address 16 November 1900. (London, 1921). "An Empire such as ours requires as its first condition an Imperial race - a race vigorous and industrious and intrepid. Health of mind and body exalt a nation in the competition of the Universe.....In the rookeries and slums which still survive, an imperial race cannot be reared. Remember that where you promote health and arrest disease, where you convert an unhealthy citizen into a healthy one, where you exercise your authority to promote sanitary conditions and suppress those which are the reverse, you are doing your duty and are also working for the Empire". 245.

13. G.A. Searle, National Efficiency. (London, 1971),141.See also B.B. Gilbert, National Insurance. (London, 1966), 79-81; J.R. Hay, The Origins of the Liberal Welfare Reforms 1906-1914. (London, 1975),31-32.

14. B.B. Gilbert, National Insurance. (London, 1966),76. See also E.J.Brennan, Education for National Efficiency; the Contribution of Sydney and Beatrice Webb. (London, 1975), 72-79.

recruiting depot where 8000 out of 11000 applicants were turned down in 1899 as unfit. (15) His ratio of only two out of five men fit for service was frequently quoted thereafter. Rowntree, reporting on poverty in York confirmed White's general conclusions. (16) They both considered that the physique of British adult males was deteriorating.

In January 1902 an article appeared in the Contemporary Review which provided factual support for the idea that national physique was deteriorating. (17) General Maurice drew attention to some of the factors underlying figures for the rejection of recruits. For instance recruiting sergeants eliminated up to ten per cent of the applicants before they ever reached the army doctors for examination, while many of those who were accepted spent long periods in army hospitals and never engaged in active combat. He therefore concluded:

> "out of every five men who are willing to enlist only two are fit to become effective soldiers" (18)

He was particularly concerned at the high incidence of dental decay among potential recruits and blamed this condition on poor diet or malnutrition in childhood. He went on:

> ".....if the great body of the nation itself is decaying in health and physical vigour, no increased inducements to enlist, whether in the form of compulsion or of higher pay or other advantages, can adequately compensate the evil" (19)

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15. A.E. White, Efficiency and Empire. (London, 1901). White's figures were corrected by witnesses to the Inter Departmental Committee on Physical Deterioration in 1904. 12,000 men were examined of whom 8,000 were completely unsuitable. Of the remainder only 1,200 were fit for active service.

16. B.S. Rowntree, Poverty. A Study of Town Life. (London, 1901). Rowntree drew attention to similar recruiting figures for Leeds, Sheffield and York. Between 1897 and 1900 only 45 per cent of 3,600 recruits were accepted as fit for duty. 216-221.

17. 'Miles" (pseudonym for Major-General Sir John Frederick Maurice), "Where to Get Men". Contemporary Review. LXXXI, January 1902. 78-86.

18. ibid, 79.

19. ibid, 82.

Maurice suggested that the schools should be a starting point for reform. Physical training for boys and further training in cookery for girls might eventually reduce the problem of degeneration. In September 1902 he repeated his views in an address to the Civic Society of Glasgow, and was encouraged by the response to contribute a second article to the Contemporary Review in the Spring of 1903. (20) He was particularly worried about the number of rejections for the Army because standards had been drastically reduced during the Boer War, a point made earlier by Charles Roberts. Maurice considered that the scale of the problem was so great that nothing short of a national investigation into the conditions of working class life would meet the problem.

Maurice received powerful support from the Annual Report of the Army Inspector-General of Recruitment, General H.C. Barrett for 1902.

> "The one subject which causes anxiety in the future as regards recruiting is the gradual deterioration of the physique of the working classes, from whom the bulk of the recruits must always be drawn (21)

The Inspector-General of Recruiting produced his Annual Report for 1903 only a few weeks after Maurice's second article was published and he concluded that there was clear evidence of physical deterioration among recruits. (22) Within a year a Royal Commission recommended that in view of the widespread physical deterioration, compulsory military training should be introduced immediately. (23) This led

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20. Major-General Sir John Frederick Maurice, "National Health: A Soldiers Duty". Contemporary Review. LXXXIII, January 1903. Maurice was the son of F.D. Maurice who had exerted a powerful influence over Charles Kingsley and Thomas Hughes in the 1850's. D. Newsome, (1961) opus cit, 211-212.

21. Report of the Inter-Departmental Committee on Physical Deterioration, 1904. BPP 1904, Report, 1, Cd. 2175, Appendix I.

22. Report of the Inspector-General of Recruiting, 1903. BPP, 1903, Cd. 1501.

23. Royal Commission on Militia and Volunteers. Report, 1904, BPP, 1904, XXX, Cd. 2601.

to further demands that military training should be enforced in schools.(24)

While the Government was deciding how to deal with the allegations of deterioration, Balfour of Burleigh presented a memorandum to the Cabinet proposing that a Royal Commission on Physical Training in Scottish elementary schools be appointed. (25) The Cabinet approved his proposal and a Commission under the chairmanship of Lord Mansfield (26) was appointed in March 1902 with the following remit:

> "To enquire into the opportunities for physical training now available in the State-aided schools and other educational institutions of Scotland; and to suggest means by which such training may be made to conduce to the welfare of the pupils; and further, how such opportunities may be increased by Continuation Classes and otherwise, so as to develop in their practical application to the requirements of life, the faculties of those who have left the day schools, and thus to contribute towards the sources of national strength".

Balfour hoped that the Commission's enquiries would lead to the introduction of a form of para-military training in all elementary schools. (27) If the minutes of evidence are considered in consecutive order it becomes obvious that the Commission shifted ground with regard to the military and medical use of physical training. The Commission was impressed by the strength of opposition

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24. H. Birchenough, "Compulsory Education and Compulsory Military Training". Nineteenth Century, Vol. 56, July 1904.

25. S.R.O. ED7/1/23. Cabinet memorandum, "Cadet Corps and Military Drill in Schools", 5th March 1902, signed, Balfour of Burleigh.

26. The Other Commissioners were Thomas Cochrane, Thomas Glen-Coats, Sir Henry Craik, Hugh Shaw Stewart M.P., J. Carfrae Alston, John Fergusson, George McCrae and Professor Alexander Ogston. They were appointed on 31st March 1902 and reported on 14th March 1903. They held 28 sittings, interviewed 127 witnesses and visited schools in Aberdeen, Edinburgh, Glasgow, London and Portsmouth.

27. S.R.O. Ed/1/23. "Cadet Corps and Drill in Schools", opus cit ".....it can only be by bringing cadet corps within the range of our educational operations and treating them, not as imitations of army organization, but as integral parts of our school system. These might be so managed as to lead boys naturally on to some adult form of military training. I do not anticipate any great expenditure being involved, because they would often take the place of Continuation Classes which are earning grants".

from School Boards and headmasters against including military drill in elementary schools. Also, having instituted its own enquiry into the health of school children in Aberdeen and Edinburgh the Commission was disturbed by the evidence of widespread disease. The conclusion emerged that it was positively dangerous to expose children to vigorous exercise without adequate medical supervision and in this way the Commission's Report differs fundamentally from what might have been expected from the arguments advanced in Balfour's original proposal to the Cabinet. (28)

Not surprisingly, in light of the background to the Commission's appointment an initial line of questioning of witnesses tended to concentrate on the merits of military drill. Sir Henry Craik was aggressive in his treatment of those early witnesses who did not favour drill. (29) The Inspectorate stood its ground and, with unanimous support from teachers and headmasters, established the view that schools found drill an excellent method of achieving order and obedience but that this objective could be achieved without reference to military training. (30) J. Struthers, Assistant Secretary of the S.E.D.,

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28. It seems important to establish that the Commissioners actually experienced these changes of attitude as a result of the response of witness. It is very unlikely that witnesses collaborated and when one considers that they were drawn from all over Scotland and England their general consensus on any point might have been considered as representative of a national opinion.

29. R.C.P.T., (1903), 11, 19. para 421-2. T.A. Stewart, Senior Chief H.M.I., was interrupted several times by Craik and ended up by saying "I meant to say nothing against military drill at all". He was pressed into agreeing with Craik's statement expressed as a question that "... it (military drill) has all the advantages of the physical drill, but it is plus something else which the mere physical drill will not give at all".

30. ibid, 11, 74, para 1824. Mr Scougal, C.H.M.I. summed up the value of drill as follows: "the essence of drill, without specifying any particular form of it, is the same all through, the quickening and the smartening and the concentration of attention, the promptness to move on the word of command and the setting up".

considered that this disciplinary function was in fact the main value of the subject in schools. (31) The Schools Boards supported the Inspectorate. Those of Aberdeen and Glasgow submitted memoranda rejecting the use of military drill in schools, and their representatives would not be moved from this point of view. (32) The Dundee School Board representative admitted that in his area there was strong opposition to "promoting the military spirit in schools". (33) An independent witness, the Reverend W. Walsh expanded this evidence further. The Dundee Board prepared a motion for the Commission to the effect that military drill should be taught in the Board schools. During discussion one member was reported to have made the following statement:

> ".....it was only fit that the School Boards of the country should take up as part of their duty, ensuring that the children under their charge were properly trained, and disciplined so as to be ready for the Army or the irregular forces". (34)

The proceedings were reported in the 'Dundee Advertiser' and within a few days the Dundee Trades Council voted against the introduction of military drill in schools. (35) Walsh made an interesting distinction between the kind of obedience required in military and educational contexts. In the former situation it might imply submission to the word of command but in an educational sense it ought to produce ".....submission to conscience and the moral law". (36) A representative

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31. ibid, 11. 2, para 8.

32. ibid, For some of the Glasgow Board objections ref. 114 para 2828, and 311 para 7910, and for the Aberdeen Board, ref. 120, para 3058.

33. ibid, 134, para 3445.

34. ibid, 291, para 7509.

35. Dundee Advertiser, 15th May 1902.

36. R.C.P.T., (1903), 11. 293, para 7509 section (c)
He went on: "The first produces automata; the second, moral beings - men filled with a sense of responsibility, duty, freedom of will and choice, decision of character".

of the Perth School Board who had been a professional soldier for forty years admitted that the Board had been forced to dismiss all their ex-Army instructors because of their foul language. After these various witnesses had appeared, the form of the Commissioners' questions changed. The first headmaster to be interviewed after the Glasgow School Board evidence had been considered was asked:

> "....would it be advisable that in any recommendation in favour of physical training it should be made clear that there is no military object implied?"(37)

The majority of the 25 headmasters favoured some form of drill but they considered that military drill involving the use of rifles should not be encouraged in elementary schools and unanimously opposed the employment of Army sergeant instructors.

Mr Shaw Stewart effectively summarised the Commission's position at the end of the twelfth sitting:

> "We have had a great deal of evidence from Town and City school masters, and they are all practically in favour of the teachers instructing in physical exercise, with that work occasionally supervised and examined by qualified instructors. They would prefer to keep the teaching of physical training in their own hands". (38)

Sir Henry Craik drafted large sections of the final Report and he summarised the evidence on military training at some length. He concluded that the Commission could not recommend the introduction of military drill

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37. ibid, 118, para 2998.

38. ibid, 244, para 6673.

in elementary schools. (39) The Commissioners adopted this view in their Report, but they did not mention the amount of opposition to the proposal. Other than a section on Cadet Corps and Boys Brigade, military drill received only one sentence, (in connection with Higher Class schools), and this was in reference to older boys only.

In addition to examining the case for military drill, the Commission heard evidence from several acknowledged experts about the alleged benefits of physical exercise. Chesterton aimed at the systematic and gradual development of all parts of the body, "the result being a healthy body in the best sense of the word". (40) For Sandow muscular development was secondary to "a really sound heart, lungs and digestive organs". (41) Alexander's priorities were "health, activity, endurance and recreation". (42) None of them specifically claimed that exercise would protect children from disease and only Chesterton could provide statistical evidence of

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39. S.R.O. ED7/1/23, Draft Report, Craik to the Secretary Mr. Pearson, 20th October 1902.
"While a large amount of evidence, carrying great weight, and with which I have every sympathy, has been given in favour of giving the training of boys and lads a distinctly military colouring, I do not think this falls within the intention of our remit though the words might be taken to cover it. It is far too large and important a national question to be remitted to a Committee on Physical Training (he underlined these words) and could not be reported on without full information from the War Office and other Government Departments. To do so would lay this Commission, under the existing remit, open to the charge of 'trying to introduce military service by a side wind'. I, therefore, have dealt with the remit as only including the making of boys and girls physically fit and developed for the requirements of life, whatever these may be, without reference to any special requirement, or as one may put it, as affording, an all round contribution towards the sources of national strength".

40. R.C.P.T., (1903), 11, 152, para 3934.

41. ibid, 284, para 7338.

42. ibid, 368, para 8994.

improved physical measurements resulting from exercise. (43) Some medical witnesses were asked specifically to comment on whether exercise would prevent certain diseases, and if weak children should be exposed to exercise. James Kerr, Medical Officer for the London School Board offered a lengthy analysis of the suitability of particular systems for children of different ages and physical condition. He was firmly convinced that exercise, if properly administered, would make children less vulnerable to disease. (44) This view was confirmed by Professor Hay of the Department of Forensic Medicine at Aberdeen University who stated that exercise would probably reduce the risk of tuberculosis and joint disease. (45) Clement Dukes, Physician to Rugby School for thirty years, emphasised the value of physical training in reducing the possibility of disease of the vital organs, of tuberculosis or joint diseases, fractures or ruptures. (46)

The medical evidence unanimously supported the beneficial effects of exercise as a means of preventing ill-health among school children until W. Leslie MacKenzie, medical member of the Local Government Board was called. He adopted a completely different line. Most of his evidence consisted of an attempt to dispel the notion of hereditary degeneration, and he gave great emphasis to the harmful effects of environmental factors such as over-crowded and poorly-ventilated housing. To him the real basis of preventitive

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43. ibid, 1, Appendix 11, 42.

44. ibid, 11, 224, para 6101-2.

45. ibid, 248, para 6709.

46. ibid, 323, para 8116.

social medicine lay in improving food and housing, and not exposing children to polluted air. He was suspicious of systems of physical training, and after quoting a case of a spinal ailment caused in his opinion by calisthenics in school, asked the Commission if they really believed that one hour of drill in the open air could compensate for fourteen hours' exposure to polluted air. (47) Not surprisingly, he was completely opposed to any form of drill or physical training in secondary schools or Universities and stated that drill was a severe nervous strain on young children. (48) He would prefer to leave children free to play unsupervised. In short, MacKenzie would not accept that physical training could improve children's health. The Commission pressed MacKenzie on his statements but there was no statistical evidence to support his or the other witnesses' conflicting views. (49) They therefore decided to invite him and Professor Hay to carry out a survey of the health of school children in Scotland, and of the methods of physical training in use in schools.

Surveys carried out in Aberdeen and Edinburgh vindicated MacKenzie's views about the importance of environment and nurture. There were 27,000 school children in Aberdeen and 30,000 in Edinburgh,

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47. ibid, 273, para 7094.

48. ibid, 264, para 6983.
"The increased pollutions due to exercise in schools put the ventilation even of the mechanically ventilated schools to a severe strain. Physical drill, except with wide open doors and windows, or in the open air, cannot in my opinion be regarded as other than a further uncompensated output of work-energy by the child. I may add here that drill of every kind, except, perhaps, musical drill, involves a severe nervous strain on young children".

49. Mr Alston, one of the Commissioners, disagreed strongly with MacKenzie.
"You laid too great strength upon nurture, environments, healthy free games, supervision of general and individual health, and put these in the first place, and that you did not think so much of physical exercise as applied to school children within school age" 271-2 para 7057.

and the sample of 600 from each city was small. MacKenzie faced this criticism when he appeared later as a witness before the Inter-departmental Committee on Physical Deterioration. But whatever the validity of these criticisms no-one questioned his main conclusions. In both cities children from schools in the poorer areas were smaller, lighter, and in worse health than their counter-parts from middle-class homes. (50) MacKenzie explained these variations in physique by the differences in the standards of food and housing. In these circumstances physical education might be positively harmful to some children. Commenting on the effects of some of the more strenuous effects of exercises taken from Sandow's system, MacKenzie wrote:

> "Some of the results are not, in my opinion, desirable in any case. The violence tends to over-development of absolutely useless muscles and to over-strain of the heart, as demonstrated in the heart-record" (51)

MacKenzie's main conclusions became the basis of the Commission's recommendations. (52) He held that:

> "First - the large number of serious and minor diseases directly and indirectly affecting physical efficiency and mental efficiency constitutes an overwhelming case for a medical inspection of school children".

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50. ibid, Report, 24, para 119.
"....the houses wherein the children live are reflected as to their quality by the height, weight, and nutrition of the children"
".....an affinity exists between conditions of nutrition and health of body and mind, on the one hand, and the measurements of height, weight, and girth on the other" 24, para 121.
"If the ratios observed by the Examiners be admitted, and it may be gathered from their reports that they did not overstate the case, there are in Edinburgh Board Schools 700 cases of unrecognised phthisis and 458 in Aberdeen, and 1300 cases of unrecognised heart disease of a dangerous nature in Edinburgh and 250 in Aberdeen. Of lesser ailments there are in the Edinburgh schools 15,000 children affected with disease of the throat and 7580 in Aberdeen, and 12,000 cases of ear disease in Edinburgh and 2250 in Aberdeen" 27 para 144.

51. ibid, Appendix IX, section 13, 77, para 4 (c).

52. ibid, Report 37,
The recommendations included the proposal to empower School Boards to institute schemes of medical inspection; to provide facilities for the provision of school meals; and that a skilled Committee should be set up to devise a model course of physical training.

> "Second - the facts as to physical exercise at the various schools demonstrate that a primary condition of any good result from increased physical training is adequate food and adequate clothing".
>
> "Third - no systematic exercise ought to be practised or enforced without a preliminary medical examination of the vital organs, to ensure that irreparable damage shall not result".
>
> "Fourth - that exercises should be organised - not as at present according to the Code Standard in which the child is studying, but - strictly in accordance with health, physical development and vigour" (53)

These conclusions indicate a significant change of emphasis, at least for MacKenzie and the Commissioners, who both now accepted the value of exercise in a correctly organised system of physical education. Although MacKenzie still made no claim that exercise would prevent disease, he considered in the light of his investigations that it could be used to cure minor defects and deformities, always provided it was properly supervised. Systematic exercise might also help in cases of retarded growth and development. There is therefore a considerable difference between his earlier criticisms of physical training and the following statement, (54) written in 1904:-

> "The special value of exercises scientifically arranged is that they are proportioned to the bodily powers at every age; that they provide for the equal and harmonious growth of all the great physiological systems; that they are kept strictly subordinate to the primary purpose of all exercise in the growing child, namely, the promotion of correct nutrition". (55)

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53. ibid, Appendix IX, p.100.

54. Appendix 6. An analysis of the views of Dr W L MacKenzie on the basis of physical education.

55. W.L. MacKenzie, The Medical Inspection of School Children. (London, 1904), 224.

'Nutrition' was the unifying concept which brought together the four component parts of a sound approach to improving health, namely food, clothing, fresh air and exercise. (56) MacKenzie had been correct in emphasising the value to the growing child of spontaneous play in the open air, and in drawing to the Commission's attention the destructive impact of a poor home environment on health. Although he believed that exercise could promote growth he tended to give more weight to the argument that the wrong kind of exercise could cause great damage. The Commission, in recommending the adoption of a national system of physical education, also argued that the Government should empower School Boards to introduce medical examination of school children and the provision of school meals. (57) In these ways MacKenzie and the Commission moved towards common ground.

The Commission considered that a special committee would be needed to draw up a national Syllabus of Physical Exercises. A Model Course of Exercises based on the Army system had been produced by the English Board of Education in 1902 but it was opposed by the teaching profession. When the Report of the Royal Commission on Physical Training was tabled on 16th March 1903 the Liberal M.P. Thomas MacNamara took the opportunity

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56. ibid.
MacKenzie used 'nutrition' in different contexts and with different shades of meaning, "the food and air supply of the organisms"; "the maintenance of function in all the organs already grown" (nutrition of adults). He also used it in describing malnutrition as insufficient food. When referring to current research on diet, it was clear that he regarded diet and nutrition as interchangeable, although this would not have been true of the researchers themselves. (see D.N. Paton, J.C. Dunlop and E.M. Inglis, A Study of the Diet of the Labouring Classes in Edinburgh, 1902). Today, environment is normally assumed to be less variable and 'nutrition' would tend to correspond to the process of digesting the correct diet.

57. R.C.P.T., (1903), Report, 29, para. 158.

to attack the Model Course. (58) Others supported him, including Sir John Gorst, who had been Parliamentary Secretary for Education when the first Model Course was produced, but had resigned early in 1902 after disagreeing with Balfour about the conduct of the 1902 Education Bill. His successor at the Board of Education, Sir William Anson, when Parliamentary Secretary at the War Office, had co-operated with Gorst in producing the first Model Course. Anson admitted that in some circumstances teachers had found the Course difficult to learn (59) and that it appeared to be unsuitable for girls and young children. In the circumstances he was prepared to appoint a Departmental Committee to inquire into the best form of physical training for school children.

Craik at once contacted Morant suggesting that Balfour should be approached about extending the inquiry into an Inter-Departmental Committee. This was approved and John Struthers, Assistant Secretary of the S.E.D. was appointed Chairman. Craik asked Professor Ogston (a member of the Royal Commission) to nominate someone with a medical qualification who might also be knowledgeable about physical training. Ogston's choice of Dr Alan Tuke, secretary of the Carnegie Gymnastic Club, proved to be an important decision. Tuke later became a Life Trustee of the Carnegie Dunfermline Trust and may have paved the way for the establishment of Dunfermline College of Physical Training and Hygiene. (60) Struthers commented to Balfour

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58. Hansard, IVth Series, Vol. 119, House of Commons, 19th March 1903, col. 1295. MacNamara insisted that the country had no right to"... compel a working man to send his children to school with the object of recruiting them for the Army in the school playground".

59. ibid, col. 1328.

60. See Chapter 7.

that he would have preferred the Committee to be entirely medical with the single proviso that women's interests should be represented. (61) Initially it was intended that witnesses should be called but Struthers threatened to resign the chairmanship of the Committee (62) on the grounds that evidence had already been taken from all nationally recognised experts by the Royal Commission. The Committee agreed simply to examine the existing Model Course and to consider how best it might be modified. Their main criticism was that it was not based on sound educational principles and they therefore established the following objectives for a new Syllabus of Physical Exercises.

> "The primary object of any course of physical exercises in schools is to maintain, and, if possible, improve the health and physique of the children." (the physical effect).
> "But the exercises which conduce to this result may, if rightly conducted, have an effect scarcely less important in developing in the scholars qualities of alertness, decision, concentration and perfect control of mind over body" (the educational effect).(63)

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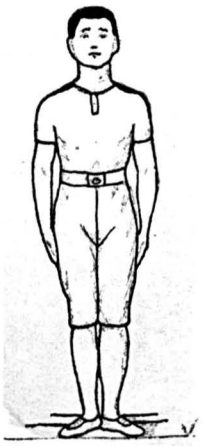
61. S.R.O. ED7/1/22, Struthers to Balfour of Burleigh, 21 April 1903.

62. S.R.O. ED7/1/22, Craik to Balfour, 28 May 1903.
"Struthers declines to serve on these terms. I request your authority to say that you decline co-operation on this basis". With Balfour's approval Craik approached Morant who accepted that witnesses should not be called. Craik drew up the terms of reference in two forms, both based on examining the existing Model Course, with the following alternative wordings:
(a).....to consider what changes are required to render it sufficiently elastic and generally adaptable for the different ages and sexes of the children in schools".
(b)....to consider what principles should be followed in order to render a Model Course sufficiently elastic and generally adaptable for the different ages and sexes of the children in schools".

Craik, Morant, and Struthers preferred (a) above but Anson insisted that the second wording be used.

63. Syllabus of Physical Exercises for use in Public Elementary Schools. H.M.S.O. 1905. 9.



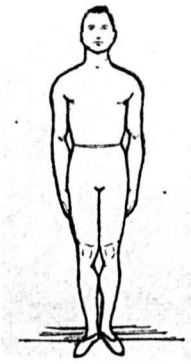
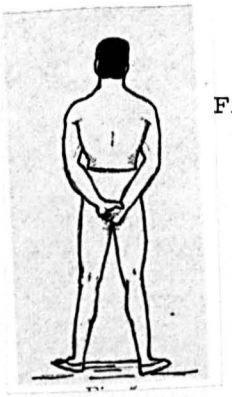


Fig.1



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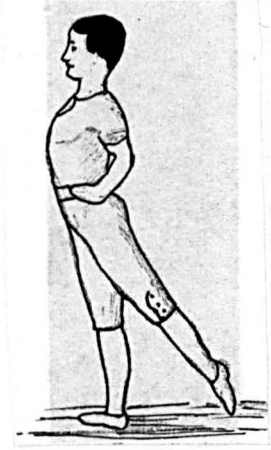

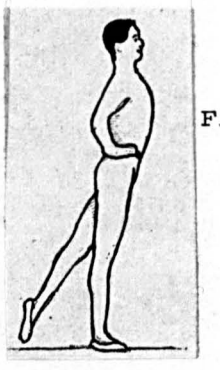

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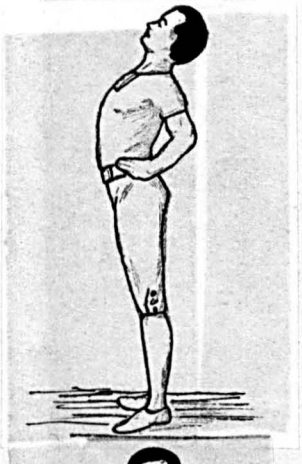


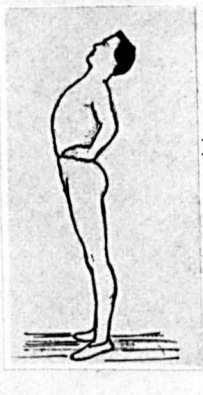
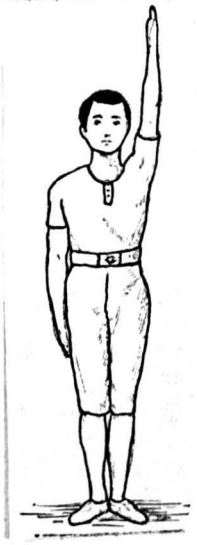


Fig.4

Fig.5



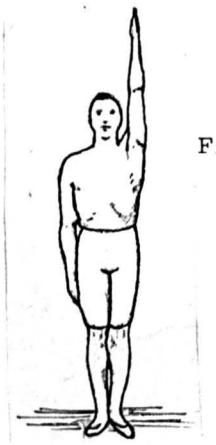
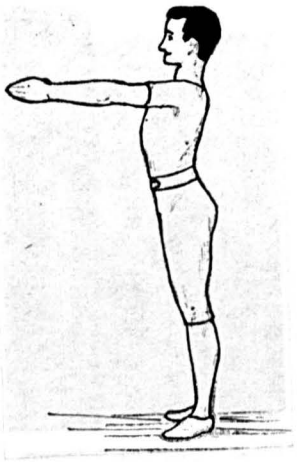


Fig.6



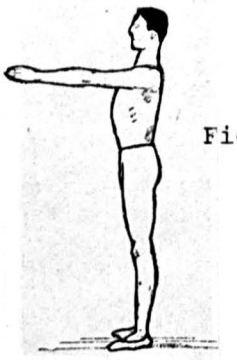


Fig.7

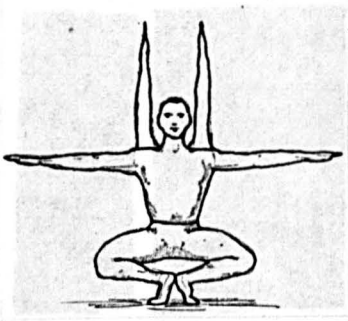


Fig.8

Selected illustrations from the Army Manual of Physical Training, and the Syllabus of Physical Exercises (1905).

Fig.9

The new Syllabus made no mention of discipline or obedience. The main focus throughout was on 'nutrition' - "Those (exercises) which have primarily a beneficial effect upon the respiration and circulation, and thus make for improved nutrition". (64) These effects on 'nutrition' were sub-divided into respiration and circulation, strength, skill and co-ordination, and balance. The Committee admitted that many of the exercises had already appeared in other systems, but their main message was that teachers must use exercise as a means of promoting 'nutrition' and that this was a sound educational objective. The militarists henceforth were in a position of trying to alter the rationale for physical training in schools and there were plenty of opponents ready to prevent this from happening. (65) The Syllabus did not offer any radical changes in practice. The 'educational' justification for building control and balance was the first recognition that acquisition of skill should be a central part of physical education. Since the exercises were to be performed without apparatus, 'progression' simply implied increasingly intricate combinations of leg and arm extensions and flexions. Exercises were drawn from a number of popular systems. The Swedish system would appear closer to the objectives laid down, but the Committee gave no reason for not adopting it. Instead it drew heavily on the Army manual (p.102, fig. 1-8). The new Syllabus of Physical Exercises would not have harmed children unless they were suffering from a cardio-vascular condition. On the other hand, unless it was carefully supervised in small numbers the 'nutrition' effects would probably have been slight, since most classes only received one half-hour lesson each week.

The differences between those who favoured a medical bias for exercise and others who wanted to introduce compulsory military training in schools did not constitute a simple two-sided argument. For example,

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64. ibid, 9.

65. J.B. Atkins (editor), National Physical Training, an Open Debate. (London, 1904).

the Lads Drill Association did not regard the British Medical Association as opponents in a fight to establish the purpose of physical training. Even opponents of military training in schools, such as Sir John Gorst and T. MacNamara, M.P., concentrated on the arguments against militarism in education rather than contrasting the medical and military benefits. (66) Only occasionally was the issue expressed as a question of alternatives. In February 1905 when the House of Lords was discussing military training, the Earl of Meath suggested that a joint War Office/Education Department Committee should be set up to consider the introduction of compulsory military training in schools. During the Debate Balfour of Burleigh argued that a distinction must be made between the use of physical exercises pursued for military and educational ends. (67) It was difficult to disentangle the national efficiency argument from military training, as various writers pointed out. (68) Sir John Gorst, a strong opponent of conscription, nevertheless recognised that a real problem existed. "How could they carry on this great Empire, if they allowed causes of this kind which affected the physical condition of the people to continue to operate, and thus prevent their having sailors and soldiers fit to serve for the protection of the Empire? (69) Gorst's own answer was to ensure that all

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66. Hansard, IVth Series, Vol. 119,House of Commons, 19 March 1903, col. 1295. T. MacNamara suggested that the country had no right to compel a working man to send his son to school "...with the object of recruiting them for the Army in the school play-ground".

67. Hansard, IVth Series, Vol. 141, House of Lords, 17 February 1905, col. 558. Balfour of Burleigh. "I am prepared to advocate ordinary physical drill as a compulsory subject as part of the general curriculum of education; I am not prepared to advocate to the same extent anything which seems to train the military side of human nature".

68. H. Birchenough, "Compulsory Education and Compulsory Military Training", Nineteenth Century. 56, July 1904, 20-27.
"It is primarily a great instrument of national defence, but it is also the nation's chief school of physical training and moral discipline. Discipline and physical fitness lie at the very root of national efficiency" 22.

69. Hansard, IVth Series, Vol. 141, House of Commons, 14th February 1905, col. 145.

children were offered access to school meals, and brought to a minimum level of fitness through physical training. (70)

Those who wanted to introduce military training in schools steadily lost ground from 1902 onwards. In 1906 the Government was strongly criticised when it emerged that rifle shooting had been introduced in the curriculum of schools in Kent. After six months it was finally conceded that rifle training could not be considered to be part of elementary education. (71) Another approach which failed was the encouragement of Cadet Corps in Schools. When Haldane, as War Secretary, introduced the Territorial and Reserve Forces Bill on 17 June 1907 there was determined opposition to a clause proposing that local authorities should be allowed to finance Cadet Corps for boys under the age of 16. (72) Sir Henry Craik, now an M.P., supported the proposal but the clause was withdrawn without going to a vote. Initially, when the Bill was discussed in the Lords, there was support for restoring the original terms of the Bill. Finally an amendment was accepted that Territorial Associations should be permitted to provide financial aid for Cadet Corps from voluntary funds. (73) Despite opposition the amendment was carried in the Commons although Haldane insisted that the Bill "....gave no power to the Army Council or to County Associations to enter the

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70. B. Simon, Education and the Labour Movement. (London, 1974), 282-286. See also J. Gorst, The Children of the Nation. How their Health and Vigour should be Promoted by the State. (London, 1906).
In January 1905 Gorst acted as chairman at a conference organised by the T.U.C. to consider state maintenance of children and a resolution from this conference was passed at the T.U.C. Annual Congress in 1905, demanding free meals, free medical advice and inspection, and scientific physical training for all children.

71. The Scotsman, 7th May 1907.

72. The Scotsman, 18th June 1907.

73. The Scotsman, 19th July 1907.

schools and establish Cadet Corps against the wishes of the Education Department". (74) During the passage of the 1908 Education (Scotland) Act, Sir Henry Craik made a further unsuccessful plea for military training for boys.

By 1905 military training had been rejected and the S.E.D. had approved the principles laid down in the introduction to the new Syllabus. (75) In the two years following publication of the Report of the Royal Commission the need for more State action in the area of child health was highlighted by leaders of the medical profession and by Liberal M.P's.

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74. The Scotsman, 31 July 1907.

75. Syllabus of Physical Exercises for use in Public Elementary Schools. H.M.S.O., 1905.

CHAPTER 6

The Acceptance of Physical Education

In 1903 public attention was drawn to the possibility that the nation was experiencing a gradual deterioration of physique. The medical profession urged the Government to introduce schemes for school meals, medical inspection and physical education. Attempts to introduce fresh legislation to empower School Boards to introduce these measures were unsuccessful. It will be shown in this chapter that senior civil servants encouraged the Boards to proceed before the statutory changes had been made.

Introducing a House of Lords Debate on National Fitness in July 1903, the Earl of Meath stated that the findings of the Royal Commission on Physical Training had confirmed his own impression that a substantial proportion of city children, who formed an overwhelming majority in their age group, were diseased and under-nourished. He suggested that the condition of children was only a part of the larger picture of national fitness (1). He therefore called on the Government to set up a national inquiry into physical deterioration of the urban working classes. The Earl of Mansfield plainly felt that there was a danger that the recommendations of the Royal Commission for Scotland would be ignored, but Balfour of Burleigh assured him that School Boards would be given every encouragement to institute schemes of medical

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1. Hansard, IVth Series, Vol. 120, House of Lords, 6 July 1903, col. 1324-1337.

inspection (2). The Duke of Devonshire announced at the end of the Debate that the Government would seek advice from the Colleges of Surgeons and Physicians as to the causes of physical unfitness, and possible remedies. He personally favoured the appointment of a Royal Commission (3).

The two Colleges reported within a month but neither would accept that figures for rejection of Army recruits could be taken as proof of national deterioration. (4) The idea of a Royal Commission was dropped and instead an Inter-Departmental Committee on Physical Deterioration was appointed on 2 September 1903. Its report was published in July 1904 and it confirmed the findings of Charles Booth, Seebohm Rowntree and of Hay and Mackenzie on questions of housing, disease and malnutrition. There was an undeniable connection between poverty and poor physique. The poor were often unemployed, underfed and, eventually sick. But there were no records over a sufficiently long period to prove or disprove the accusations of deterioration. Of the 53 recommendations made by the Committee only four directly concerned physical training. However, they were unanimous in suggesting that physical exercises were of great value in improving physique, and that special rooms for physical training should be provided in schools. (5) The Government was urged to recognise the need for a constant supply of skilled instructors,

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2. ibid, col. 1356.

3. ibid, col. 1350.

4. The Royal College of Physicians did qualify their conclusions by suggesting that a survey of the physical condition of the nation should be carried out.

5. Report of the Inter-Departmental Committee on Physical Deterioration, 1904. BPP, 1904 XXXII, Cd. 2175, para 308

and to support approved courses of training.(6)

The main effect of the Report was to publicise the shocking living conditions of a large section of the population and once again to bring to public attention the considerable amount of disease and deformities prevalent among working class children.(7) The starting point for solving the problem was the age group compelled by law to attend school. The Committee recommended that medical inspection of school children should be made a compulsory duty for all school authorities. Despite the evidence of widespread malnutrition the Committee were wary of "the somewhat dangerous doctrine that free meals are the necessary concomitant of free education".(8) The cost of preparing and cooking school meals might be charged against the rates, but the actual cost of the food must be borne by the parents. Defaulters should be fined. (9)

There was strong support for these views from the medical profession. In February 1904 the Society of Medical Officers of Health ran a conference on child health which included a lengthy debate on physical education.(10) During the conference, James Kerr,

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6. ibid, para 309, para 314

7. B.B. Gilbert, National Insurance. (London, 1966), 91 "The report of the Interdepartmental Committee on Physical Deterioration awakened scientific controversy over the condition of the people in a way unknown in England since the days of sanitary reform in the eighteen-seventies. Central to the problem of poverty appeared the problem of ill health among the poor."

8. Cd. 2175, 1,72, para 365

9. ibid, 1,72, para 362.

10. "Physical Culture in Elementary Schools". L.E. Stephens, Public Health XVI. April 1904, 387-392.

medical officer for the London School Board, and A Newsholme (11) both called for the introduction of courses on school hygiene. In November 1904 the Royal College of Physicians in Scotland and the Royal College of Surgeons in Edinburgh set up a Joint Committee to investigate the Health Conditions of school children in Scotland. The British Medical Journal campaigned from 1903 onwards for Government action to reverse the alleged trend towards physical deterioration. The Trades Union passed a series of resolutions between 1895 and 1905 calling for a range of educational reforms, including provision of school meals, medical inspection and physical training (12).

The Physical Deterioration Committee has been concerned mainly with the situation in England, but within a month of publication of the Report the Dundee Social Union decided to institute an enquiry into the social life of the working classes in the city. Since there had been some criticism of the small numbers involved in the survey conducted by Mackenzie and Hay on behalf of the Royal Commission. (13) the Dundee enquiry offered the opportunity to

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11. Sir Arthur Newsholme campaigned for the introduction of courses on hygiene from the mid 1880's.
A. Newsholme. School Hygiene (London, 1887). This book ran to eight editions by 1902. After 1903 James Kerr took over as editor and by 1924 sixteen editions had appeared. See also A.H. Hogarth. Medical Inspection of Schools 1909.
"....the best way of combatting physical deterioration is by means of physical education and by the instruction of teachers and children in the elementary principles and essentials of health living." 67-68.

12. D. Riley "Physical deterioration of young people in Great Britain in the late nineteenth and early twentieth century and suggestions to remedy it."
M.Ed. thesis, Manchester, 1973, vol. 1, 117.

13. Cd. 2175, 11, 274, para 6950-6962.

verify the earlier findings and to make comparisons with the Physical Deterioration Report. A similar cycle of deprivation was revealed - overcrowded, badly ventilated houses with insanitary closets; women employed as cheap labour in the jute mills; broken-down young mothers and undernourished children. The infant mortality rate among working mothers was above the national average. In a sample of 1,345 children no fewer than 715 had died before the age of five. (14) The Report pointed out that as long as society chose not to interfere with parental responsibility the consequences for children's lives would continue to be severe. Medical examination showed that one third of the children in elementary schools were suffering from defective vision and nearly half the children examined had hearing defects. The figures for heart and lung disorders were even higher than those revealed previously in Aberdeen, Edinburgh and Glasgow. For example, the proportion of heart diseases in Dundee was 7.47 per cent compared with Aberdeen (1 per cent), Edinburgh (4.33 per cent) and Glasgow (5.83 per cent) (15) The examiners were also asked to

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14. Report on Housing and Industrial Conditions in Dundee. Dundee Social Union. 1905. The Report dealt with the following five topics - 1. Housing 2. Family income and expenditure 3. Employment and wages 4. Child mortality 5. Medical inspection of school children. 1,025 primary and 480 secondary children were examined.
Dundee had the highest infant mortality rate of the larger towns in Scotland. "240 mothers...had borne in all 855 children and no fewer than 520, or almost 59 per cent, were dead. The remaining 91 mothers had either worked before marriage only or not at all, and out of a total of 460 children 195, or slightly over 42 per cent, had died. There were 630 living children and 715 dead for the 331 families, and all of the dead children, with seven exceptions, lived less than five years, and no fewer than 630 less than one year." X11-X111

15. ibid, 101
W. Leslie Mackenzie advised on the form of the examination and again he gave little emphasis to tests of functional efficiency of muscles and organs. The one item, for grip strength, which had been included in the Royal Commission research, was deleted.

comment on the physical training in the five schools. Class teachers took all the lessons which on average lasted about two hours per week for each class. It consisted mainly of drill with occasional use of dumb-bells, bar-bells and Indian clubs (16) and the doctors were concerned about possible harm to weaker children. (17) Those involved in the examination of the children were even more anxious about the long term effects of malnutrition and conditions of work in the mills and factories. Many of the children who were exempted from school at the age of 12 worked from 6.00 am till 6.00 pm and were then obliged to attend an evening school from 7.15 pm to 9.15 pm. (18) Commenting on "the great strain on the health of growing children", the Report strongly recommended that a more systematic approach be adopted to the provision of school meals. The picture which emerges is of a school population already underfed and weakened by a variety of diseases, dirty and frequently verminous, surviving on a poor quality diet. (19) The various official Reports on physical training and deterioration all concluded that the

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16. ibid, 91

17. In the context of heart diseases, they suggested that these children should be under constant medical supervision since they might be "seriously and permanently damaged" by physical training.

18. ibid, 94

19. ibid, 34
The writers compared the diet of 22 families with Dunlop and Paton's work on diet of the labouring classes in Edinburgh, and concluded that it was of a lower order than the Edinburgh sample. The main meal consisted of broth and potatoes supplemented throughout the day by "pieces" of bread and butter.

solution lay in provision of school meals, medical inspection of school children and physical education in schools. Each of these will therefore be considered in turn.

Even before the Committee on Physical Deterioration was appointed, the British Medical Association began a campaign for Government action. In July 1903 they appeared to accept that the nation was in decline.(20) In the next few months, occasional leading articles in the British Medical Journal suggested the provision of school meals as the most likely solution to the problem.(21) Beginning in November 1903 the Journal ran a series on the question of degeneration, covering meals, medical inspection and physical education.(22) Then, between October 1904 and March 1905 the Journal included a further series on school hygiene. In a leader article in September 1905 they returned to the subject: "Everyone admits that... it is criminal that teachers and children alike should be in ignorance of the simplest laws of health". (23)

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20. "National Health and Military Service", British Medical Journal, 25 July 1903, 207-208, "It is easily conceivable that the British race will deteriorate." See also "National Physique", British Medical Journal, 18 July 1903, 154-156.

21. "The Food Factor in Education", British Medical Journal, 22 August 1903, 424, "the degeneracy in physique of the rising generation...is best to be combatted..by an intelligent employment of the food factor."

22. "Physical Degeneration", British Medical Journal

Part 1 - 21	November	1903,	1338-1341
" 2 - 28	"	"	1430-1433
" 3 - 5	December	"	1471-1474
" 4 - 12	"	"	1555-1557
" 5 - 19	"	"	1614-1614 and 1652-1653
" 6 - 2	January	1904	46
" 7 - 16	"	"	140-142 (This article dealt with the physical culture of the children of the labouring classes)

23. British Medical Journal, 30 September 1905, 819.

In November 1903, eight months before the Physical Deterioration Committee reported the Journal recommended medical inspection and feeding of school children. They were particularly impressed by comments made to the Royal Commission by W.G. Don, Deputy Surgeon of the Army Medical Service, who claimed to have personally examined 100,000 recruits over a period of 17 years - "I am convinced that judicious physical and military drill, if combined with sufficient food and a healthy environment, will signally contribute to the moral as well as to the better physical development of boyhood and early manhood." (24) In a leading article reviewing the series the Journal concluded that the root of the problem of national unfitness was inadequate feeding during childhood.(25). The evidence of the Physical Deterioration Committee was later taken by the Journal to indicate that the incidence of disease and deformity was at an alarming level and they called on the Government to take immediate steps to resolve the situation. (26)

The Government was also under pressure from members of Parliament. The Estimates for education in Scotland for 1903-1904 were discussed in the Commons a few weeks after the Report of the Royal Commission was published. Mr. Shaw Stewart made a strong plea for Government expenditure on school meals, medical inspection and physical training. Sir John Gorst, supporting Stewart, gave particular emphasis to the need for school meals. He was anxious that parental responsibility should be protected but he was convinced that where charitable aid was insufficient or non-existent, the State must intervene to ensure that children were fed.(27) However, public opinion was not quite ready to accept the proposals that the State should provide

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24. British Medical Journal, 21 November 1903, 1339

25 ibid, 6th February 1904, 319-321

26. "The Report of the Privy Council upon Physical Deterioration", The Lancet, 6 August 1904, 390-392. "Physical Deterioration", British Medical Journal, 6 August 1904, 296.

27. Hansard, IVth Series, Vol. 119, House of Commons 18 June 1903, col. 1355.

food, medical aid and clothing for necessitous children.(28) The Liberal ideal of individual responsibility required that parents should meet their responsibilities or be branded as paupers. When the Physical Deterioration Report was debated in April 1905 this notion was challenged and a resolution giving local authorities discretionary power to provide school meals was passed.(29) The resolution specifically stated that parents who could not provide for their children due to misfortune, illness or accident should not be tainted with the title of pauper. One of the strongest supporters of this resolution was the ~~Scottish~~ M.P., Keir Hardie. As another M.P. pointed out, as matters stood, "the neglectful parent was at liberty to starve his child". (30) Nevertheless, some members saw the resolution as the first step to sapping "the very foundations of national and social well-being". (31) The Government spokesman, Sir William Anson, President of the Local Government Board, indicated that he would be issuing a circular to Poor Law guardians enabling them to offer relief to the parents if the school managers or head teacher applied on their behalf, but this would still brand the parent as a pauper. He and his colleagues were defeated by 100 votes to 64 and the Relief (School Children) Order of 1905 was passed. Permissive legislation was quickly shown to be unsatisfactory where School Boards had reservations about providing meals.(32) The same arguments about parental responsibility were raised again in 1906 when a Select Committee was appointed to report

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28. Cd. 2175,1,72, para 365

29. Hansard IVth Series, House of Commons, vol. 145, 18 April 1905, col. 568

30. ibid, Col. 542

31. ibid, Col. 546

32. Report of the Inter-Departmental Committee on the Medical Inspection and Feeding of Children Attending Public Elementary Schools. BPP, 1905 VII, Cd. 2779.

on the question of school meals in Scotland and England. (33) Bills to provide school meals in both countries received a second reading in March 1906 with surprisingly little opposition. However, the evidence given by the four Scottish witnesses to the Select Committee was positively hostile. (34) The House of Lords was equally antagonistic to the measure being applied in Scotland. (35) When on 21 December 1906 the Bill received Royal assent, the provisions were not applicable to Scotland. Gilbert states that the passage of the English School Meals Act and the later Administrative Provisions Act of 1907 establishing medical inspection of school children in England "marked the beginning of the construction of the welfare state" (36) Despite the evidence of the Royal Commission and the recommendations of the Dundee Social Union, Scotland was denied legislation for school meals until 1908.

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33. Report of the Select Committee on the Education (Provision of Meals) Bill 1906: and the Education (Provision of Meals) (Scotland) Bill, 1906.
BPP, 1906, VIII, Cd.288

34. ibid, 197
Two of the witnesses were the Chairmen of the School Boards for Glasgow and Edinburgh respectively. The former was strongly opposed to the Bill and the latter stated that on 3 May 1906 his Board had passed a motion of opposition. They mentioned the strong feeling in Scotland that parental authority and responsibility should be protected. Flora Stevenson, a former Chairman of the Edinburgh School Board, also attacked the scheme in her address on the occasion of being given the freedom of the City of Edinburgh. "Parents are all too ready to throw off their responsibilities nowadays. What is wanted is an awakening of the public conscience to make them realistic and accept their responsibility." (The Scotsman, 24 May 1905)

35. F. le Gros Clark, Social History of the School Meals Service. (London,1948), 8. "The Bill went to and fro from Commons to Lords; but no agreement seemed possible. The Lords persisted in their refusal to include Scotland. When the debate in the Commons was resumed on 21 December, Campbell Bannerman, the Liberal Prime Minister, himself spoke. The Lords amendment would have, he said, to be accepted: "but this" said he "is the strongest case of the inversion of authority on these constitutional matters, that we have ever seen."

36. B.B. Gilbert, National Insurance. (London,1966), 102

In October 1902, while he was drafting sections of the Report of the Royal Commission on Physical Training, Craik forwarded a private letter to Balfour of Burleigh outlining the main points for a new Scottish Bill to replace the Education Act of 1872. (37) The first draft of the Bill included a section on the use of funds for medical supervision and physical training, worded as follows: "To defraying or assisting to defray the cost of such sanitary supervision of the premises of schools under the inspection of the Department, such medical examination of the scholars therein, and such inspection of the physical training given, in such schools as they may from time to time approve of" (38) Struthers was given the task of drafting amendments in the light of discussions with the Minister, the Treasury, and other Department officials. There is no record of any discussion about physical training, but in a third printed draft the reference to inspection of physical training was deleted.(39) However, only two days before the Bill was introduced, section 9, dealing with additional general powers of the Committee, was expanded to include the power to provide for - "the physical training and recreation of pupils attending schools within their education district and for their medical examination and supervision". (4)

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37. S.R.O. ED/14/13, Craik to Balfour, October 1902.

38. S.R.O. ED/14/13, Education (Scotland) Bill 1904. First Print, August 1903, section 9(2).

39. S.R.O. ED/14/13, Education (Scotland) Bill 1904. Third Print, December 1903, section 39. The relevant section, which was retained and included in the sixth printed draft presented to the Cabinet in February 1904, read as follows:
"To defraying or assisting to defray the cost of all such sanitary or medical or other such special examination or supervision of schools under the inspection of the Department as the said Department may from time to time approve of".

40. S.R.O. ED/14/13, Education (Scotland) Bill, 1904. Seventh Print. March 1904, section 9.

During the first and second readings of the Bill criticism centred on the greatly increased powers of the Department, on the problems of differential rating and on the abolition of School Boards. (41) Nevertheless, the Bill reached the Committee stage and by June 1904 the first thirty clauses had been agreed including the section on physical training and medical inspection. But the Government ran out of time and it was accepted that the Bill must be dropped. During this period the Department received representations from a variety of groups representing School Boards, teachers' organisations, societies and individuals. Out of 400 items of correspondence only two dealt specifically with medical examination and there was no reference to physical training. The medical profession (42) and various M.P's pressed the Government to make medical inspection a compulsory duty for local education authorities and Mr Shaw Stewart succeeded in producing an amendment separating responsibility for the sanitary condition of school premises (to be taken on by sanitary inspectors) and for the supervision of medical examination of the pupils (to be undertaken by School Medical Officers). A further Bill was introduced in March 1905 but it also met with opposition on the same grounds and did not reach the statute book.(43)

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41. Hansard, IVth Series, Vol. 132, House of Commons, 28 March 1904, col. 864-905.

42. "The organisation of medical inspection of Schools", British Medical Journal, 4th November 1903, 1288. Later, Sir Arthur Newsholme claimed to have written this eloquent leading article. A. Newsholme, 50 Years in Public Health. (London, 1935), 391.

43. The Scotsman and Glasgow Herald both produced angry leader articles about the failure of the 1905 Bill. The Scotsman (15 July 1905) commented - "Sir Henry Campbell Bannerman and his spadassins threw off yesterday the cloak of friendliness with which they have so long mocked public opinion, and proclaimed their inveterate hostility to the first principle of the Bill" (the principle of enlarged administrative areas).

Although there had been no opposition to the proposals for medical inspection the proposals for physical education as a cure for physical deterioration met with more general acceptance. In April 1904 the Earl of Meath addressed the Society of Medical Officers of Health. His answer to the problem of physical deterioration was plenty of exercise and drill. (44) A few months later Sir Lauder Brunton addressed the same audience and asked for their support for a National League for Physical Education and Improvement which he proposed to form. No-one opposed his statement that "judicious physical training will not only aid the growth of a child, but will make it more healthy generally, and give it more power to resist disease". (45) In the same month, the Royal Sanitary Institute organised a conference on School Hygiene and invited several speakers who had already written extensively on the subject of school health. (46) At the end of the conference the Institute adopted a resolution that drill and swimming should be made compulsory in elementary schools. (47) The British Medical Association ran a series of articles on school hygiene and in the final article an assessment was made of the medical value of exercise. This statement was identical with

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44. Lord Brabazon (Earl of Meath), "The Deterioration of British Health and Physique". Public Health, XVI, April 1904, 387.

45. Sir Lauder Brunton , "Physical Degeneration", Public Health, XVII, February 1905, 277. The League was formed in June 1905.

46. Among the speakers were Dr. Clement Dukes, Dr James Kerr, Sir Lauder Brunton and Eugene Sully.

47. British Medical Journal, 11 February 1905, 328.

Mackenzie's conception of improved 'nutrition' through exercise. (48) In the same article the British Medical Association declared its support for the Swedish system of gymnastics with its emphasis on posture and all-round harmonious development.(49) It was argued that these exercises met the main objectives of growth and development and improved 'nutrition'.

In the context of such widespread support, the Liberal Government, elected in 1906 with a large majority, instituted a vigorous programme of social reforms. On 28 August 1907 the Education (Administration Provisions) Act for England was passed which required local education authorities to "provide for the medical inspection of children at appropriate times during their school career, and also to make such arrangements as may be sanctioned by the Board of Education for attending to the health and physical

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48. "The Teaching of Hygiene in Schools - Physical Exercises, Part 2", British Medical Journal, 21 April 1905, 736-737. "Exercise improves the nutrition, not only of the muscles themselves, but of all the other organs; it stimulates the action of the lungs, increasing the intake of oxygen and the output of carbonic acid; it accelerates the action of the heart, and both in this way and by hastening the passage of the blood through the muscles aids the circulation; indirectly it improves the digestion, the appetite and the nutrition of the nervous system; and quickens the operation of the mind. Besides this, it restores wasted or undeveloped muscles".

49. ibid.

"The Swedish system has been accepted by us as the best system of physical training".

condition of children educated in public elementary schools..."(50) De George Newman was appointed in 1908 to lead the development of a Medical Department of the Board of Education, which included oversight of physical education. Newman's work has been described extensively and it is quite clear that within twelve months of his appointment the Board was committed to the Swedish system of gymnastics. (51) Attempts to introduce similar legislation for Scotland were unsuccessful, but when it became clear that there was general support for medical inspection and physical education, first Craik and then Struthers, as Secretary of the S.E.D., chose to proceed in advance of legislation being passed. How they did so is illustrated in two examples, in the appointment of school medical officers and of an inspector of physical education.

The first example concerned the appointment of school medical officers. Struthers was the only Scottish member of the Committee on Physical Deterioration and within three months of the publication of its Report he succeeded Sir Henry Craik as Secretary of the S.E.D. Before taking up office he had already opened the door to the

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50. B.B. Gilbert, National Insurance. (London, 1966), 127-131. Gilbert's account of circumstances leading to this enactment indicates that R.L. Morant, the powerful and astute Secretary of the Board of Education, foresaw that these few lines would allow him to build a school health service offering inspection, treatment and physical training. "In the school medical service, Parliament and the British nation were the victims of a political - administrative trick by which the evolution from personal medical inspection to personal medical care was blurred and disguised so that not even the House of Commons, let alone the public, had the opportunity to discuss the change in any detail. The perpetrator of this deception was Robert Morant ..." 117-118.

51. P.C. McIntosh, Physical Education in England. (London, 1958), 146-149. A.C. Woodward, "The Development of Physical Education in Schools in England and Wales, 1907-1933". M.Ed. thesis. Manchester, 1968.

the introduction of medical inspection and this was an area in which he appeared to go beyond existing regulations. In 1903, Craik had written to all School Boards asking for comments on the Report of the Royal Commission. Glasgow were particularly interested in para. 158 which recommended that special officers might be appointed for this purpose, at an annual fee not exceeding £100 a year to be borne out of Imperial funds. They asked if the Department would approve expenditure on medical supervision.(52) Craik had then been succeeded by Struthers who consulted W. Hepburn Miller, legal adviser for the framing of various regulations and Education Bills - "Do you think that there is anything in the Education Act which precludes School Boards from incurring expense for medical enquiries and advice incidental to the duties which are incumbent on them under these Acts?" (53). Miller saw no difficulty and Struthers wrote to Glasgow accordingly - "My Lords are advised that the terms of the Education Acts do not preclude School Boards from incurring such expenditure as may be necessary in order to carry out the recommendations contained in Section VI of the Report of the Royal Commission on Physical Training (Scotland)".(54) In February 1905 Govan enquired if it might appoint medical officers to examine school children. Miller advised that this would be ultra vires but Struthers considered that it would be most unsatisfactory to give varying answers to neighbouring Boards, and he proposed to reply to Govan, in the exact terms of his previous letter to Glasgow.

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52. S.R.O. ED7/1/23, Glasgow School Board to Struthers, 13 May 1903.

53. S.R.O. ED7/1/23, Struthers to W. Hepburn Miller, 15 May 1903.

54. S.R.O. ED7/1/23, Struthers to Glasgow School Board, 19 May 1903.

Miller suggested that if Glasgow had already appointed medical officers, then Govan should also be allowed to do so, otherwise "Govan should be pulled up at the same point." However, despite Miller's comment that the two cases were quite different, Struthers sent a copy of his letter to Glasgow to the Govan School Board.(55) Having established the principle, he then approved Govan's actions in 1907 in appointing ten assistant medical officers of schools at £50 each per annum, the salaries to be met out of the Government grant.(56) Edinburgh, Aberdeen and Dumbarton also made specific enquiries about appointing school medical officers and in each case Struthers replied in exactly the same terms. The Govan School Board consulted MacKenzie about the duties of the school medical officers and agreed to adopt his proposals made to Edinburgh in 1903.(57) There was no provision in the existing Education Acts to cover Struthers' actions and it is clear from his correspondence with Miller that he was fully aware that the appointment of school medical staff might be outwith the legal limits of his powers.

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55. S.R.O. ED7/1/23, Miller to Struthers, 7 March 1905. "It appears to me that there is an appreciable distinction between the two things. The Govan proposal seems to mean something much more systematic and on a much more extended scale than I supposed the other proposal to imply".

56. The Board appointed a principal school medical officer in 1909.

57. J. Ewan, "The School Health Service," Glasgow. Doctor of Medicine thesis, Glasgow. 1956.
The duties adopted by Govan, which are set out in full by Ewan, correspond almost exactly with those suggested by Mackenzie to the Edinburgh School Board who, when they approved Flora Stevenson's motion in November 1903 to appoint a school medical officer, invited Mackenzie to draw up a list of duties. As well as inspecting and reporting on physical training the medical officer would regularly inspect and record the physical condition of children in the Board Schools. See Edinburgh School Board "Regulations for the Medical Officer of Schools," 17 December 1906. The School Board agreed to these duties but postponed the appointment.

The second instance of support for physical education concerned the employment of an Inspector of physical education. A sum of £300 had been set aside for general inspection of secondary education but Craik decided to use it to pay for an H.M.I. for physical education. (58) In December 1903 Craik wrote privately to Captain Armytage, Superintendent of Army Gymnasia in Scotland, asking if he would be interested in the post. At this stage Craik had not informed either the Treasury or Balfour of his intentions. Only when he had found a candidate for the post did he do so.(59) Initially, he stated that the duties would be restricted to inspecting physical training in secondary schools and training colleges. Captain Alan Foster, an acting Deputy Quarter Master General in his mid-50s and third choice for the post of H.M.I. for Physical Training, was eventually appointed on 23 August 1904. His two-year appointment was extended in 1905 to five years and for a further three years in 1909. In February 1899 Craik had informed General Chapman that he did not think that the employment of Army officers would be "consistent with the system administered under the Education Acts"(60) Without fresh legislation he was able to offer Foster a post as H.M.I. in 1904(61) He was fully aware that no official estimate had

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58. S.R.O. ED7/4/22, Letter undated, Craik to Captain Armytage.

59. S.R.O. ED7/4/22, Craik to Balfour, 12 August 1903.
"....Some time ago you spoke to me about the appointment of someone to assist us in connection with the Inspection of Physical Training".

60. S.R.O. ED7/1/11, Craik to General Chapman, 8 February 1899.

61. S.R.O. ED7/1/23, Craik to Pearson, 12 December 1902. One candidate who had actually offered his services was George Cruden of the Aberdeen Physical Training College, but Craik had already rejected him.
"Cruden has now actually applied both to Lord Balfour and to me for a paid post, so that the appeal to his name, or to his book, would be most inopportune. I would much rather recognise his school and perhaps give a grant to it; but he would not make a good inspector".

been made for the post but he gambled that the Treasury would not object.(62)

George Macdonald, Assistant Secretary of the S.E.D. wrote to Foster informing him of the nature of his duties. He was quite specific in stating that he would operate in Higher Class Schools.(63) Macdonald pointed out to Foster that he was embarking on a difficult task, in as much as the powers of the Department were purely advisory. He warned that there would be opposition to physical training from those who "detected in it the seeds of militarism, the first move towards conscription". He advised Foster that changes would be made most easily where medical evidence could be found to support them. Despite these instructions Foster simply ignored the restriction that limited his duties to secondary schools. Throughout his period of service he never deviated from the following three main aims which formed the basis for his six Annual Reports published each year from 1905 to 1910 inclusive -

(a) to establish that in primary schools class teachers must accept responsibility for taking physical training with their own classes under the guidance of a trained specialist teacher - all secondary classes to be taught by specialists;

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62. S.R.O. ED/7/4/22, letter marked Private but undated, Craik to M. Innes. "We have not yet obtained Treasury authority for the institution of any salaried or pensionable post in the regular establishment of this office for this purpose and I think that in any case the Treasury would not probably, even if they agreed that any new item should appear in their estimates, be disposed to comment on the creation of such a post".

63. S.R.O. ED/7/4/22, G. Macdonald to Foster, 1 October 1904. The original letter had been drawn up on 10 September 1903, addressed to Captain Innes. It was issued unaltered to Foster one year later.

(b) to institute the Swedish system of gymnastics with its declared emphasis on posture and all-round bodily development; and

(c) to introduce records of physical measurement as an aid to medical inspection of all school children.(64)

It is quite clear from their correspondence that Struthers was aware that Foster was spending a large part of his time in elementary schools, contrary to the conditions under which he was appointed.(65) Far from discouraging him, Struthers went along with this policy and encouraged Foster to work closely with Dr Mackenzie in building up records of primary school children's health.

It appears that first Craik and then Struthers applied Department funds to posts which had no legal standing. If the 1904 or 1905 Education Bills had been passed the appointment of school medical officers and an H.M.I. for physical education could easily have been

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64. R.C.C.E. 1905-1906. BPP. 1906, XXX — Appendix to Mr Scougal's Report for the Southern Division for 1905. 265-269.

R.C.C.E. 1906-1907. BPP. 1907, XXiii — There was no separate report by Captain Foster but a section was included on p.365

R.C.C.E. 1907-1908. BPP. 1908, XXViii — Appendix to Mr Scougal's Report for the Southern Division for 1907. 395-196

R.C.C.E. 1908-1909. BPP. 1909, XXi — Appendix to Mr Scougal's Report for the Southern Division for 1908. 48-51.

R.C.C.E. 1908-1910. BPP. 1910, XXVi — Appendix to Mr Scougal's Report for the Southern Division for 1909. 47-49.

R.C.C.E. 1910-1911. BPP. 1911, XXi — Appendix to Mr Jamieson's Report for the Southern Division for 1910. 49-50.

65. S.R.O. ED/7/4/22. 13 December 1905. — Correspondence between Foster and Struthers,

justified, but when legislation was delayed both men simply decide to take matters into their own hands. In view of the heated Parliamentary discussions on the various reports on physical training and physical deterioration, their behaviour seems quite irregular. The result of their actions was that medical inspection of Scottish children came in by the back door, and Swedish gymnastics received powerful support from an H.M.I. who, strictly speaking, should not have been appointed.

CHAPTER 7

Training for Physical Education

From about 1899 improvement in provision for the teaching of physical education was evident at all levels of the profession. Four aspects will be considered in this chapter, namely the place of physical education in the training of student teachers; the development of courses in physical education for serving teachers; the appointment of advisers in physical education; and the emergence of full-time courses for specialist teachers of physical education at Dunfermline College of Hygiene and Physical Training. These lead on to a fifth point. The content of instruction in other courses varied, but those at the College were firmly based on medical considerations, and the main practical subject was Swedish gymnastics.

Physical education was not a compulsory subject for students attending the Scottish Training Colleges until August 1901. In that month the S.E.D. issued circular 329 on 'Training of Teachers' which laid down certain requirements for College courses. (1) Although the circular dispensed with the existing uniform syllabus prescribed by the S.E.D., it was specified that certain professional subjects must be taken by all students. One of these compulsory subjects was physical training. There was no indication of a minimum number of hours and only the following guide-lines were offered about content and method. The subject should cover:

> "Physical exercises and drill; explanation of the rationale of the exercises, and a course of instruction in the laws

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1. R.C.C.E., 1900-01, BPP, 1901, XXII, 269. Circular 329. Training of Teachers. 30th August 1901, with 3 appendices.

of health". (2)

"Practice should also be given in conducting a class in Physical Exercises and Drill". (3)

Two years later, when physical education was examined in four Scottish Colleges it was found that it was closely linked with the work of the local Volunteers, and the staff at six out of the eight Colleges had been trained by George Cruden.(4) The examiner recommended the adoption of the Model Course of Physical Exercises (see p103) but no action was taken on this suggestion. When Captain Foster was appointed H.M.I. for Physical Training he visited all the Colleges and came out strongly against the military content of the work. He wrote:

> "It may be well to make it clear once for all that I do not think that military methods of Physical Education are suitable or necessary. For the girls military training is obviously inappropriate, and to many of the boys greater physical benefits will accrue from non military methods".(5)

He was also very critical of the Colleges for allowing students to appear for physical education clad in thick boots, coats, waistcoats, or in the case of women students, tight corsets.

Progress came through a radical re-structuring of the government of Training Colleges, quickly followed by the issue of new Regulations. A proposal to establish four provincial advisory councils had been included in the early drafts of the 1904 Education (Scotland) Bill, but when it failed to pass into law the S.E.D. established four Provincial Committees for the Training of Teachers by a Minute of 30th January 1905.(6)

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2. ibid, Appendix A, 272

3. ibid, Appendix C, 273

4. R.C.C.E., 1902-03. BPP, 1903, XXII, 798-99

5. R.C.C.E., 1904-05, BPP, 1905, XXIX, 749

6. R.C.C.E., 1905-06. BPP, 1906, XXX, 550-560. Minute of 30th January 1905 Providing for the Establishement of Committees for the Training of Teachers.

Lord Balfour of Burleigh protested against this method of introducing such major changes in the system, but the Government's measure was not impeded. Each Committee was centred in a University town and provision was made for the Churches to hand over the Colleges to the new Committees which included a majority representation from the School Boards. New Regulations for the Training of Teachers were published on 7th June 1906. (7)

The new Committees were advised by Captain Foster and Dr. MacKenzie to make such improvements as were necessary to bring student teachers to the stage where they would later be able to take their own classes for physical education. These ideas were considered by the four provincial Committees at a Joint Conference held at St. Andrews on 9th March 1907. (8) In advance of the meeting Foster and MacKenzie had circulated the Committees with draft copies of an S.E.D. Memorandum on Physical Training which was to play an important part in the formulation of Provincial Committee policy. (9) The Memorandum was critical of the use of military drill in schools, which was "more appropriate to the training of acrobats than to the training even of soldiers".

> "Squad-drill, sudden and explosive words of command, tests of endurance, hard acrobatic exercises, were all found to be more applicable to grown men than to growing children. The army recruit is medically examined on admission to the Army; but the school child is not medically examined on admission to school. Yet the exercises that

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7. R.C.C.E., 1906-07. BPP, 1907, XXIII, 149-186. Regulations (1907) for the Preliminary Education, Training and Certification of Teachers for Various Grades of Schools.

8. St. Andrews Provincial Committee. Minutes, 1, 20th November 1905 - 22nd June 1907, 72. Meeting held on 9th March 1907. A full set of these minutes is held at the offices of General Teaching Council for Scotland, in Edinburgh.

9. S.R.O., ED 7/3. S.E.D. Memorandum on Systems of Physical Training and their Relation to the Personal Hygiene of School Life. 17th May 1907 signed by W. Leslie MacKenzie and Captain A. Foster.

> might properly be exacted from a medically tested recruit were in many places exacted, by drill sergeants, from a non-tested child. And the history of the recruit was known to the doctor; the history of the child was not necessarily known to anyone; yet the same or similar exercises were required of him." (10)

The Memorandum drew attention to the number of investigations which had uncovered defects of eyes, ears, bones and joints; obstructed breathing and defective circulation; defective nutrition from insufficient food, or over work, or under-sleep. They therefore suggested that exercises could be used for improvement of these defects, to counteract deformities, and even to cure disease. It was argued that the main aim of physical education should be growth and 'nutrition'. All of this was subject to the need for medical supervision, and the Memorandum concluded that every College should appoint a trained Medical Officer who would run courses in Personal andSchool Hygiene and also supervise the staff of the physical education department. (11) In adopting these proposals, the representatives of the Provincial Committees approved the introduction of Swedish gymnastics. The Conference had recommended that one of the professional courses of study should be Personal and School Hygiene, extending to not less than 70 hours, (12) and at subsequent meetings of the full committees this was taken to include physical education. (13)

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10. ibid, 2

11. ibid, 4

12. St. Andrew's Provincial Committee. Minutes, 1, 20th November 1905-22 June 1907, 73 and 78. Meetings hald on 6th April 1907.

13. British Medical Journal, 10th August 1907, 325-334. "Second International Congress on School Hygiene" MacKenzie reported this development to the Congress, and in his Presidential address Sir Lauder Brunton described it as the most significent event which Britain could report to an international Congress of this kind.

Within a month of the Joint Conference the St. Andrews Provincial Committee had met to approve the Conference recommendations and at their meeting they also agreed to a request from Captain Foster for a meeting with Dr. MacKenzie and Mr. Scougal, C.H.M.I. (14) After this meeting the Committee agreed to create a new post of Medical Officer at a salary of £400 per annum, whose duties would be those suggested in the Memorandum on Physical Training. The other Provincial Committees all made similar decisions, and by 1909 physical education in the Colleges had become an integral part of compulsory courses for all students, under the general direction of Medical Officers. (15)

The second line of progress was in the increase in opportunities for class teachers to attend in-service training courses. The Schools (Scotland) Code was substantially revised in 1899. (16) Previously, willing teachers who attended vacation courses had been obliged to pay their own expenses. Article 83 (d) of the New Code stipulated that grants could be made for in-service courses, and under a related Article 91 (d), School Boards could reclaim up to 75 per cent of the actual expenditure. Teachers were not expected to pay any part of the course fees and the balance after the S.E.D. grant was paid was to be met by School Boards. In considering claims the S.E.D. would take into account reports from visiting Inspectors, and Sir Henry Craik appointed Captain Armytage, superintendent of Army gymnasia in Scotland, to inspect in-service courses in physical education from 1900 onwards. He carried

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14. St. Andrew's Provincial Committee Minutes, opus cit, 6th April 1907, 78.

15. R.C.C.E., 1909-1910. BPP, 1910, XXVI, section P. Training of Teachers (Scotland), 12.
"For the first time provision has been made at all the Centres for carrying on the Physical Training of the students during their whole period of training. All students now devots at least one hour per week to this subject. Formerly instruction in it was frequently restricted to the winter or the summer term".

16. R.C.C.E., 1899-1900. BPP, 1900, XXIV, Code (1899) of the Scotch Education Department for Day Schools.

out this work until Captain Foster was appointed as H.M.I. for physical education in 1904. According to Captain Armytage's evidence to the Royal Commission, these courses consisted mainly of marching and exercises without apparatus, and he was fairly critical of the courses run by Cruden (see chapter 1) and Mr. A. Sturrock of Dundee. (17)

Between 1899 and 1906 when new Regulations were introduced, only drawing surpassed physical training in the number of certificates awarded for attendance at in-service courses (table 3).

Subject	No. in Attendance	No. of Certificates Awarded	No. of Courses
Drill	1,404	1,310	37
Cookery and Laundry	164	140	13
Drawing	13,170	10,750	307
Manual Instruction	1,183	936	52
Modern Languages	480	305	32
Natural Science	1,632	1,242	76
Physical Science	890	734	58
	18,923	15,417	575

Table 3

Courses organised bySchool Boards and Country Councils under Article 91(d), November 1899 - March 1905. (Extracts from annual reports of the S.E.D.)

The number of courses offered in drill each year increased steadily (Table 4) and the number of authorities involved annually grew slowly but surely. (Table 8)

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17. R.C.P.T.,(1903),11, 80, para. 2024.
"I have seen both Colonel Cruden's work and Mr. Sturrock's work... In both cases I found that the work was not what you would call smart ... it was certainly not up to the quality of the work done at Aldershot"

	No. in Attendance	No. of Certificates Awarded	No. of Courses
Nov. 1899 - March 1901	160	154	4
Apr. 1901 - March 1902	275	275	6
Apr. 1902 - March 1903	204	176	8
Apr. 1903 - March 1904	405	391	8
Apr. 1904 - March 1905	360	332	11
	1,404	4,310	37

Table 4

Courses on Drill offered under Article 91(d) November 1889 - March 1905. (S.E.D. Annual Reports)

	No. in Attendance	No. of Certificates	No. of Courses
Glasgow	335	309	5
Fife	163	153	5
Dumfries	157	154	3
Hamilton	54	33	3
Perth	72	61	3
Ayr	48	45	2
Ross and Cromarty	45	45	2
Stirling	51	39	2
Aberdeen	24	24	1
Alloa	16	16	1
Airdrie	52	52	1
Dundee	251	249	1
Falkirk	39	39	1
Motherwell	35	35	1
Rothesay	23	23	1
	1,365	1,277	32*

Table 5

Location of Courses in Drill run under Article 91(d) November 1899 - 1905. (S.E.D. Annual Reports)

*The Location of two of these courses is not given in the Annual Reports of the S.E.D.

The peak in demand co-incided withthe formation of Provincial Committees and publication of the new Regulations. More than twice as many teachers came forward for in-service courses in physical education in 1906-07 as had appeared in 1904-05 (table 6), and even when this wave of enthusiasm had subsided, the numbers settled at a slightly higher level than that of earlier years. (18)

	1899 1903	1903 1904	1904 1905	1905 1906	1906 1907	1907 1908	1908 1909	1909 1910	1910 1911	Totals
No. of Courses	18	8	11	11	22	28	32	36	18	184
No. of Certificates	587	391	332	583	848	614	700	622	405	5082

Table 6

No. of teachers receiving certificates for successful completion of in-service courses in physical training 1899-1911. (S.E.D. Annual Reports).

Of those who attended, not all were awarded certificates for successfully completing the course. For example in 1906-07 only 794 out of the 1192 teachers who attended actually received certificates. (19) The length of courses gradually increased, and under the influence of Captain Foster, the new advisers, and the staff of Dunfermline College, the content moved progressively towards Swedish gymnastics. The St. Andrews Provincial Committee invited Dunfermline College to undertake the majority of their in-service courses and Miss E.A. Roberts provided

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18. R.C.C.E., 1914-15. BPP, 1914-16, XX, Section R, Training of Teachers, Table 10, 57. According to S.E.D. Annual Reports the numbers attending in-service courses from 1899 to 1905 were 1310 compared with 997 for 1910-1914. The lowest year in the later period, 1913-14, produced 167 certificates compared with 154 in 1900-01.

19. R.C.C.E., 1907-08. BPP, 1908, XXVIII, Tables 9 and 10, 722-727. The summary table totals (table 10), are at odds with the details of all the courses (table 9) run throughout Scotland. The figures quoted here are taken from the latter.

an account (20) of how she tackled this task using her own Handbook of Physical Exercises, based on the Swedish system. (21) She stipulated a minimum of 25 hours for a course, of which half was practical work and the rest was a lecture-course. The teachers were taken through exercises drawn from tables covering the whole age range of the elementary school, and given practice in "commanding" their colleagues. Miss Roberts outlined the theory which she covered with in-service groups, all of which was related to the Swedish system. In discussion she mentioned that all teachers who came on her course were obliged first to be medically examined, and Foster confirmed that the S.E.D. advised School Boards to take this precaution. Between 1899 and 1911 over 5000 certificates were issued to class teachers who attended in-service courses in physical education, and many more teachers attended without receiving certificates. At this point the improvements in College courses began to affect the numbers attending in-service courses. Mr. Smith C.H.M.I. reporting on the training of teachers in 1911-12 commented:-

> "The profession is now recruited almost entirely from the Training Colleges: most of the recruits have had five years training in these "newer subjects"; and many of them possess qualification under Article 37(b)*".(22)

He therefore concluded that the peak in demand had passed but subjects such as physical education would be more likely to find their rightful place in the curriculum.

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20. Miss E.A.Roberts, "Hints on Giving Short Courses in Physical Training", a lecture given at the conference of Gymnastic Teachers and Organisers of Physical Training held at Dunfermline. Published in The Monthly Leaflet of the Ling Association, 4 July 1907 No.7, 53-56 (held at the P.E.A. Offices, London).

21. Miss E.A.Roberts, A Handbook of Free-Standing Exercises. (London,1905). The intention was to provide "the Elementary teacher...with a series of complete lessons on the lines of the Model Course of Physical Exercises issued by the Board of Education".

22. R.C.C.E., 1912-1913. BPP, 1913, XXII, .Section 5. Training of Teachers, 33.
*Under Article 37(b) of the Regulations for the Training of Teachers, students could obtain a special qualification to teach one or more of a certain group of subjects at a fairly basic level.

The third line of progress was the appointment of advisers and specialist teachers. St. Leonard's School in St. Andrews and the Merchant Company schools in Edinburgh employed women teachers trained at the Royal Central Gymnastics Institute in Stockholm for many years before the first appointment of a specialist teacher by a School Board.(23) St. Leonards was the first school in Scotland to employ a woman specialist (in 1891) followed in 1893 by the Merchant Company. The first wave of School Board appointments (24) took place between 1906 and 1910. Like many other Boards, Edinburgh had employed ex-Army instructors, but in 1906 they decided to appoint a woman trained at Dartford College. Within a few months of this appointment fresh proposals were made for staffing in physical education. First, three of the instructors who had worked for the Board for up to sixteen years were to be replaced by two women specialist teachers. (25) Second, applications were to be invited from suitably qualified men for the new post of Supervisor of Physical Training. Before advertising the post of Supervisor the Board heard that the Edinburgh Provincial Committee was also considering making an appointment at Moray House Training College, and it was agreed that a joint post should be created to cover the following areas of work:

"For the Provincial Committee. To supervise the training

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23. I. Thomson, Physical Education in Scotland. Appendix 3. Physical Education in Girls Schools.

24. R.C.C.E., 1907-08. BPP, 1908, XXVIII, 48-51. Report on Physical Training in Scottish Schools, by Captain Foster. Foster reported that 'a large number of the school boards' had appointed specialist teachers. He specifically mentioned Edinburgh, Glasgow, Falkirk, Kirkcaldy, Stirling, Linlithgow and Hawick.

25. Edinburgh School Board. Minutes, 30 January 1907.

of physical education to full-time students; and to conduct in-service courses for men teachers in the Province.

For the School Board. To take charge of the physical education of junior students; and to organise and supervise physical education in schools.

By coming to this agreement, the Board and the Committee established a senior post at a high salary for which women were not eligible.(26) An Army Officer, Captain Cheales was selected for the post from a list of 102 applicants. This scheme was copied by theGlasgow Provincial Committee and the School Board, who appointed two men (Colonel V.Gooderson and Lieutenant Street) as advisers, and two women trained at Dartford College. In Aberdeen, the Provincial Committee acted independently of the School Board, and in 1907 appointed a doctor as lecturer in hygiene. The Board appointed a woman specialist but she was not designated as a Supervisor. As the number of students increased and physical education expanded in schools the joint posts in Edinburgh and Glasgow gave way to separate appointments. Captain Cheales took up a full-time appointment with the Provincial Committee in 1912 and the School Board appointed a new supervisor, James Hall. Colonel Gooderson on the other hand chose to work full-time with the Glasgow School Board and the Provincial Committee made a separate appointment.

Instead of persisting with the previous policy of persuasion, the 1908 Education Act made physical training a compulsory part of the school curriculum, and County Committees were encouraged to appoint organising teachers of physical training. S.E.D. policy was to make class teachers in primary schools responsible for physical training of their own classes, with help and guidance from the visiting organising

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26. The salary for the post was £300 p.a. at a time when the Principal of Dunfermline College of Hygiene and Physical Training received £225 and the average salary for qualified teachers in schools was £155 (men) and £80 (women).

teacher and a small staff of specialists trained in Swedish gymnastics. Larger secondary schools should have their own specialist teachers. Some authorities had already been moving in this direction before the Act was passed. For instance, beginning with one woman specialist teacher in 1907, Fife gradually built up a staff of six over the next two years. (27) Edinburgh, Glasgow, Govan and Leith all appointed Superintendents to arrange the work of the itinerant instructors. Glasgow had a team of six of these peripatetic teachers each of whom covered about 30 primary schools. Dundee employed only one woman to visit all the primary schools in the city, and this was the pattern adopted by most of the medium-size Boards, e.g. Cathcart, Eastwood, Greenock, Hamilton, Kilmarnock, Kirkcaldy, Maryhill, Perth, Paisley and Stirling. All of these Boards, varying in size from 3,500 (Stirling) to 15,800 (Paisley) employed one instructor by 1912.

Initially supervisors were not based at the Education Offices. They were expected to complete 10 full teaching sessions each week, to administer playing fields and to co-ordinate swimming instruction, in addition to supervising the work of other School Board staff and paying periodic visits to evening classes. (28) The first advisers encouraged the development of Swedish gymnastics in secondary schools despite their military backgrounds, and most of the new schools were fitted with

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27. R.C.C.E., 1908. BPP, XXi, Mr. Scougal's Divisional Report for the Southern Division, 20. The ultimate aim was "to parcel out the country into some twelve or thirteen districts with a higher class or higher grade school as the centre of each group, to have one (or, in some cases, two) experts attached to each of these centres, whose duties will be (i) to give instruction in physical exercises to the more advanced scholars, (ii) to supervise such instruction in all schools within their district."

28. Conversations with Mr. James Forbes, first adviser in physical education for Dundee who received the first Dunfermline College Diploma awarded to a male teacher of physical education in 1908. A photocopy of his Diploma is shown in appendix 5.

Swedish apparatus.(29) They were in a position to influence staffing in physical education, and authorities who employed advisers gradually replaced drill instructors with specialist teachers. Most of these were women trained at the privately-owned English Colleges of physical education, but in 1905 Struthers took the initiative in events leading to the foundation of a new College of Physical Education in Scotland.

The fourth, and perhaps most important line of progress was in the training of specialist teachers. In January 1905, only one month after becoming Secretary of the S.E.D., Struthers saw the opportunity to create a supply of specialist teachers of physical training. Established to administer a generous grant from Andrew Carnegie, the Carnegie Dunfermline Trust had erected what was probably the most spacious and best equipped gymnasium in the country. Struthers wrote to the Trustees suggesting that he should visit them to look at the gymnasium,:-

> "... and to confer with the Trustees as to the possibility of its being rendered available for the formation of a school of physical training for teachers." (30)

He persuaded them that the accommodation, equipment and staffing of the existing gymnasium would make the addition of a course for teachers relatively simple and inexpensive. Within two months the Trustees approved the following scheme drawn up by one of their members, Dr. Tuke who had served with Struthers on the inter-Departmental Committee on

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29. R.C.C.E., 1907-08. BPP, 1908, XXVIII, 48-51. Report on Physical Training in Scottish Schools, by Captain Alan Foster. "In a number of school gymnasia and central halls Swedish apparatus has recently been put up."

30. Carnegie Dunfermline Trust. Minutes, 11th January 1905.

physical Exercises:

1. A College of Hygiene and Physical Training for women, including a hostel should be established.
2. A School of Physical Training for men pupil-teachers should also be established on a non-residential basis at the Gymnasium.
3. The female students would be offered a full-time course but the male pupil-teachers would be employed part-time in the swimming pool and gymnasium.
4. A clinic should be set up in the Gymnasium for the medical examination and treatment of school children. (31)

From the outset the College was firmly committed to a conception of physical training as an aspect of school hygiene and preventive medicine. In some ways the College followed the lines established by Madam Bergman-Osterberg, first in her college at Hampstead (opened in 1885) and later in the first residential specialist physical education college in Britain, opened in Dartford in Kent in the year 1895. McIntosh has pointed out that other specialist colleges - such as Anstey (1899), Chelsea (1898), I.M. Marsh (1900) and Bedford (1903) all adopted Swedish gymnastics. (32) Many of the staff at these Colleges had been trained at Dartford - for example two of the first three Principals of Dunfermline College - and for the first five years of its existence the new Scottish College for women relied entirely on staff trained in colleges in England. (33) In fact the time-table for Dartford at the turn of the century is almost identical with a time-table for women students at Dunfermline College in 1911. (34) The allocation of hours in this time-

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31. ibid, 24th March 1905.

32. P.C. McIntosh, Physical Education in England, 123.

33. Miss Ogston, the first Principal was trained at Chelsea College and Miss E.A. Roberts and Miss M.S. Tait were trained at Dartford. As well as staff trained in England there were one or two Swedish teachers and several doctors.

34. J. May. Bergman-Osterberg, 109-110.

table shows that Swedish gymnastics was the core of the practical work. Despite these apparent similarities Dunfermline College differed from the English colleges in other ways. First, the original staff had been appointed and were expected to work in a public gymnasium and also to undertake teaching duties in the local elementary schools. Before the College opened there were 3 men and 2 other women, both trained at Chelsea College, as well as Miss Ogston, the first Principal. (35) Second, it was intended from the outset that a small number of men would be trained alongside the women. (36) Third, a school clinic was started in 1906 and women students were able to gain practical experience of recognising defects and using remedial gymnastics to cure them.

Perhaps the main difference between Dunfermline College and the English Institutions emerged from the quite different pattern of teacher training in the two countries. In England, as McIntosh explains, "all these colleges were private institutions for fee-paying students and, for forty years or more, none had any financial assistance from the State". (37) Almost from its birth Dunfermline College had the status of a national institution. Even before it opened, Struthers suggested to the Marquess of Linlithgow the Vice-President for Education, that

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35. Miss Ogston was the daughter of Professor Ogston who served on the Royal Commission on Physical Training. One of her assistants, Miss L.M. Rendell was appointed in 1908 as the first woman inspector of physical training in England.

36. Carnegie Dunfermline Trust. File, 'Transfer of the College for men to Glasgow' Memorandum, October 1930.
"As it was thought unlikely that suitable men would offer themselves as students, a scheme for training male pupil teachers was inaugurated."

37. P.C. McIntosh. Physical Education in England, 123

the S.E.D. should recognise the College Diploma under Chapter VI of the new teacher training regulations. (38) In Scotland entrance qualifications, college courses, and categories of teachers were laid down nationally and the S.E.D. insisted that the regulations be adhered to strictly. Apart from the Provincial Training Centres, only a few central institutions were approved in terms of staff, facilities and equipment as capable of meeting these stringent requirements and their diplomas were effectively a licence to teach special subjects in Scottish schools. In other words it was very much in their interest to be recognised by the S.E.D. and it was possible in Scotland in a way that was not accepted in England for a privately financed institution to be recognised at the national centre for training of teachers in that subject.

In his memorandum to Linlithgow, Struthers traced the background to the Report of the Royal Commission on Physical Training and the evolution of a national syllabus of physical exercises, with the consequent need for a centre to train specialist teachers of physical education. (39) Pointing out that the students would probably be of a 'distinctly better class in society than the ordinary teacher', Struthers explained that income from the substantial fees would go some way towards making the College self-supporting. Since 'public opinion

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38. The Regulations for Training of Teachers issued on 7th June 1906 introduced two types of certificate (General and Special) to cover all subjects in primary and secondary schools.

    Chapter 4. General - for primary schools, generally for non-graduates.
    Chapter 5. General - for higher subjects in secondary schools, normally for graduates.
    Chapter 6. Special - for certain specified non-academic subjects in secondary schools.

39. Carnegie Dunfermline Trust. File, - "Foundation of the College". Memorandum, undated, Struthers to the Marquess of Linlithgow, sometime prior to the opening of Dunfermline College.
    "...there is room and need - for a totally different class of teachers who are so to say specialists in physical exercise, having a deep and accurate knowledge of the physiological facts on which any rational system of physical exercise is based, who have a clear idea of the effects aimed at, and the way in which they will best be produced, and who also know the limitations of physical exercises, and their incidental dangers...".

has not as yet ripened sufficiently to admit of the Department applying National funds' he proposed official recognition of the College Diplomas rather than direct financial assistance. It appears that Struthers ranked health and physical strength as the main aims of physical education and he suggested that a major contribution of specialist teachers would be the early recognition and proper treatment of defects of physique. (40) With the agreement of Linlithgow, Struthers informed the Trustees that before the College Diploma could be recognised the S.E.D. would have to be satisfied on the following four points. (41)

(a) evidence of sufficient general education before admission,
(b) a course of special training of sufficient duration, (42)
(c) inspection of the work of the course,
(d) an inquiry as to the procedures adopted by the lecturers before determining the relative proficiency of the scheme.

By September 1906 the Trustees had worked out with Captain Foster and Mr. Scougal C.H.M.I., the relevant details to meet the conditions laid down by Struthers, and an official request for recognition was approved early in October. (43) Before meeting to confer with St. Andrews' Provincial Committee in the following April the Trust submitted an outline course of professional training. This was modified by Professor Edgar of St. Andrews University, who subsequently taught some of these

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40. ibid

41. ibid. Struthers to Secretary, Carnegie Dunfermline Trust. 11 July 1905.

42. Carnegie Dunfermline Trust. Minutes, 21st November 1905
Struthers returned to Dunfermline on 21st November 1905, when he attempted in vain to persuade the Trustees to run a 3-year course rather than 2 years.

43. Carnegie Dunfermline Trust. "Foundation of the College".
Struthers to Secretary, 15th October 1906.
"The Department will be prepared to recognise both the Pass Certificate (or Ordinary Diploma) and the Diploma with Honours as Diplomas of proficiency as a special subject for the purposes of Article 47 of the new Regulations. The holders of the Diploma will thereafter be recognised as qualified teachers of Physical Training subject to their either concurrently with their course or afterwards taking such part of the professional training of teachers as may be agreed upon".

courses, and it was then approved by the Committee and by the Trustees.(44)

None of the English Colleges were subjected to this degree of control by an external agency, and none of them had a formal relationship with a University. According to May, Education and Psychology were not included as subjects in the Dartford course. (45) The power of the S.E.D. was revealed when the Provincial Committee, with the full support of the Trustees, approached Struthers with a request that Professor Edgar should examine those candidates whose entrance qualifications fell below the required standards. In his reply in August 1907 Struthers insisted that there could be no deviation from the standards laid down by the Department. (46) The College was obliged to accept this judgement and the role of the University was confined to providing instruction in courses approved by the S.E.D. (47)

The balance between theory and practical competence was another area in which the S.E.D. made its views known in no uncertain terms.

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44. In these negotiations the College was obliged to modify their ideas to meet the requirements of the Department and the University. This was a considerable departure from the complete autonomy of Madam Bergman-Osterberg. Professor Edgar considered that from a practical and technical view the College proposals for professional training were excellent but the academic content was too narrow. The College acceded to his request that lectures in Psychology (10 hours) Principles of Education (10 hours) and Ethics (10 hours) be included. The Department insisted that each student should spend at least 30 hours on teaching practice in schools.

45. J. May, Bergman-Osterberg, 36,41,55.

46. Carnegie Dunfermline Trust. "Foundation of the College" Struthers to the Secretary of St. Andrews Provincial Committee, 2nd August 1907. "It is the duty of your Committee to make itself responsible for the strictly professional part of the training of the students in question including practice in teaching".

47. Sir Henry Wood, "Teacher Training in England and Scotland". Advancement of Science. March 1964, 509-515.
Wood's comment seems appropriate here, although it concerned the development of Provincial Committees and the 1906 Teacher Training regulations. "Whatever chance of direct University participation in teacher training there may have been were then lost; the Protestant Churches handed over their colleges to the State and a strongly centralised state system began to develop".

During a visit to the College in June 1907 Mr. Scougal C.H.M.I. discussed the course content with the staff. He deprecated any tendency to over-emphasise the importance of academic work, for example in anatomy and physiology. The main emphasis must be on practical activity because the primary function of the College should be -

> "to train students who would be qualified to act as supervisors of the teaching of physical exercises in groups of schools throughout the country, and to undertake the instruction in physical exercises of junior students in full training, and class teachers".(48)

It is noticeable that he was describing the work of Supervisors of Physical Training and College staff, or when taken together, the kind of joint appointment made in Edinburgh and Glasgow. He did not seem to expect many of the students to move into secondary schools. Captain Foster, who accompanied Mr. Scougal, is recorded as sharing these opinions. The College having accepted these various conditions, retrospective recognition of the College Diploma was awarded as from 1st July 1907, when the first College graduates completed their 2-year course.

The College grew out of a thriving gymnastic club which had prompted Andrew Carnegie to build a gymnasium and swimming pool. The majority of club members were men and it was the male superintendent of the gymnasium who drew up the programme. (49) Before the question

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48. Carnegie Dunfermline Trust. Minutes, 11th June 1907.

49. The programme included classes for boys, girls, High school boys and High school girls, a teachers class, and the main users - the Carnegie Gymnastic Club. There was a scale of fees for each group. The teachers class led to the award of the Dundee Physical Training Society, candidates being examined by Mr. A. Sturrock, formerly director of the Dundee Public Gymnasium and part-time instructor at St. Andrews University.

of a College was mooted there were already 2 full-time men and 2 boys employed to offer instruction and to maintain and clean the premises. When Dr. Tuke's scheme for a College for women was approved, the Trustees also agreed to establish a School of Physical Training for men, based at the gymnasium. (50) There was a clear national need for men teachers of physical training but the main development in previous years had been limited to women. The Trustees began with two young boys who combined their work in the gymnasium and baths with mainly practical classes. They lived locally and were paid £15, £20 and £25 in the three years of their course of training. (51) In September 1906 when rapid progress was being made with the content of the Diploma course for women, it was obvious that the men would have to take a large amount of extra work in anatomy and physiology to qualify for a Diploma. In a private meeting with Dr. Tuke in November 1907 Struthers expressed satisfaction with the progress of the men's course, and indicated that the S.E.D. would look favourably on an application for recognition of the men's Diploma. (52) Dr. Tuke then drew up a revised

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50. Carnegie Dunfermline Trust. Minutes, 24th March 1905.
The Trustees purchased a house in Abbey Park Place, converted it into a hostel for women students and appointed a warden. Stables were converted into a small gymnasium, allowing some of the work to be taken there. For lectures, swimming and clinics, the students walked the short distance to the Baths and Gymnasium. Two extra female teachers were appointed giving an establishment of Principal, Warden and 4 lecturers and a part-time lecturer who was also the Medical Officer for the Trust. A School of Physical Training for men was established under Mr. A. Hughes the Superintendent of the gymnasium.

51. Carnegie Dunfermline Trust. Minutes, 10 September 1906.
In September 1906 the Trustees decided before taking on a third male student that two bursaries tenable for 2 years and worth £35 a year should be offered for pupils of Dunfermline High School to cover tuition and daily board.

52. Carnegie Dunfermline Trust. Minutes, 19 November 1907.
Dr. Tuke reported on his meeting in London with Struthers and the Trustees asked Tuke to draw up a revised syllabus for the course for men students.

Prospectus for the men's course which established clearly the medical nature of physical education. (53) The course content was substantially the same for men and for women. There was a minimum of one hour a day for Swedish gymnastics and a considerable amount of teaching practice in schools (5 afternoons each week for women, 3 mornings for men). (54) The total hours for practical work exceeded the time allocation for theory, and the only real difference in the courses lay in the employment of female students in the Remedial Clinics (table 7).

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53. Prospectus for male students at the Carnegie Gymnasium and College of Hygiene, 1908
"Not only is Physical Training a branch of every properly organised educational system; but, as one of its primary objects is, by systematic exercises, to raise the standard of helth of the community and render it more immune to invasion by the organisms of disease, this subject becomes directly connected with the science of Preventitive Medicine, and forms a distinct branch of Public Health".

54. Notes from a conversation with Mr. James Forbes, one of the first two men students to receive a Diploma from the College.
"Every day as a student, I along with the other male student, Andrew Harley were taught Swedish gymnastics on the Swedish beam and the wall-bars as well as free standing exercises for about one hour. This was followed with the ladies on Anatomy or Physiology. Separate from the ladies we would also have lectures on the Theory of Movement based on a book by Nils Posse, which was an exhaustive description of the Swedish system. Between half past two and four o'clock school children came into the gymnasium for physical training. Mr. Harley and I had the opportunity to teach the classes in free standing, Indian clubs, bar-bell, vaulting and general games, but we were never allowed to teach swimming. We taught games only as a part of the indoor gymnastics lesson and we were never expected to take outdoor games ... Our only contact with the lady students was the lectures on Anatomy or Physiology, and our practical training was kept entirely separate".
See Appendix 5 for photo-copies of Mr. Forbes Diploma, and others.

	Educational Gymnastics	Recreational Gymnastics	Remedial Gymnastics	Games	Swimming	Fencing	Dancing
Men	5	2	2	3½	2	1	-
Women	5	-	2	5	1	-	2
	Anatomy	Physiology	Hygiene	Theory of move-ment	Schools	Clinics	
Men	3	3	2	2	8	-	
Women	3	3	2	1	10	3	

Table 7

Time-table for senior students (men and women) for session 1911-12 at Dunfermline College of Hygiene and Physical Training.

After similar negotiations with the Provincial Committee and the S.E.D the course for men was recognised with effect from January 1908.(55) The Trustees were now running two separate establishments, one under the control of the Lady Principal and the other under the Director of the Gymnasium. Apart from the two Colleges, the Trustees had undertaken to institute medical inspection of school children. After a preliminary meeting with Dr. Mackenzie in May 1905, the Trust appointed Dr. R. C. Ash as Medical Officer and invited him to inspect all the school children in Dunfermline, using the schedule adopted by theRoyal Commission on Physical Training. Similtaneously the Trustees set about establishing a School Clinic alongside the Baths, and the new Medical Officer was encouraged to offer treatment for minor defects. Dr. Ash was joined by Dr. Cameron and both lectured to male and female College students on anatomy and physiology as well as introducing students to methods of treating bodily deformities. Thus, from the earliest days, students were encouraged to regard remedial work as an important aspect of physical training.

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55. Carnegie Dunfermline Trust. "Correspondence with the S.E.D." Struthers to the Secretary, 3rd January 1908.

In February 1909 expenditure on salaries alone had risen to £1600 p.a. and the Trustees decided to ask the S.E.D. to recognise the College as a central institution. (56) Struthers replied that the Department would go along with this proposal, but meantime Mr. Scougal C.H.M.I., Dr. Mackenzie and Captain Foster asked for a meeting with the Gymnasium Committee and the College Committee. Scougal asked that the two institutions be brought together under a specially qualified head "who would supervise all the work carried on by the Trust in the interests of Physical Culture and also be responsible for the organisation of the College". (57) By July, Struthers was in a position to inform the Trustees that the College had been given recognition as a central institution and it was now eligible for Government grants. (58) It took a series of staff resignations and a great deal of further discussion before the Trustees were willing to accept Scougal's proposals in total, but eventually on 1st May 1909 Dr. Lewis Cruickshank, lecturer in hygiene and physical training for the Aberdeen Provincial Committee, was appointed Principal with overall responsibility for the work of the Trust in all matters relating to hygiene and physical training. (59)

Within six years of Struthers' first meeting with the Trustees, two courses leading to the award of a Diploma in Physical Training had been established and recognised by the S.E.D; a scheme for the medical

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56. Carnegie Dunfermline Trust. Minutes 4th March 1909.

57. ibid, 15th July 1909.

58. Carnegie Dunfermline Trust. Correspondence with the S.E.D. Struthers to the Secretary, 24th July 1909.
Recognition of the College as a Central Institution was effective from 22nd June 1909.

59. Carnegie Dunfermline Trust. Minutes, 17th March 1911.

inspection and treatment of school children had been implemented; the normal work of the Baths and Gymnasium had been linked to the training of teachers to the mutual benefit of students and the community; Swedish gymnastics was unchallenged as the core of the Diploma courses; and the whole enterprise was recognised as a central institution eligible for Government grants. The question arises as to whether the S.E.D. exerted undue pressure on the Trustees in formulating College courses and establishing policy which would be carried into schools by the graduates of Dunfermline College.

It was not until 1909 that the S.E.D. could offer financial aid and in the previous four years the Trustees were at liberty to reject the offer of recognition of the Diplomas if they had felt that the price was too high. In fact the Department insisted on high standards of entry and a sound course of professional training, neither of which was a controversial area. There was no disagreement about the balance between theory and practice, and the nature of the practical work did not cause any conflict. On various important issues, Dr. Tuke was delegated to approach Struthers, and according to letters and minutes the Trustees seemed satisfied with his advice. (60) If the Trustees lost complete autonomy, they gave it up willingly, and their views about the kind of teacher required in the period prior to the first World War appeared to co-incide with those of the S.E.D. The relationship emerges as a partnership rather than as a 'leader and led' situation.

The contribution of Dunfermline College to the establishment of physical training in school was embryonic. The total output of the College, of those who entered training between 1905 and 1918, was only 208 women and 26 men (table 8). Allowing for a proportion of the women who married

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60. M. Cruickshank, History of the Training of Teachers in Scotland. (University of London Press, 1970), 154.
"Struthers is given credit for the birth of the College, Moreover his influence on the radical changes in the whole structure of teacher training is shown".

Course dates	No. of Students Admitted		No. of Diplomas Awarded	
	Men	Women	Men	Women
1905-1907	2	11	-	11
1906-1908	-	8	2	7
1907-1909	2	7	-	7
1908-1910	5	17	5	16
1909-1911	11	12	11	12
1910-1912	5	16	5	14
1911-1913	3	12	3	16
1912-1914	-	15	-	15
1913-1915	-	16	-	16
1914-1916	-	20	-	16
1915-1917	-	20	1	20
1916-1918	-	19	-	17
1917-1919	-	21	-	23
1918-1920	-	20	-	18
Totals	28	214	26	208

Table 8
Number of students entering training and graduating from Dunfermline College, 1905-1920. (Annual reports of Carnegie Dunfermline Trust).

and left teaching, and at least half of the men who went South due to difficulties in finding employment in Scotland, the College probably injected about 150 teachers of physical training into Scottish schools over a period of 15 years. The College became a hub for the activities of the profession- conferences, new methods, in-service courses and recruitment for posts at all levels - the sheer fact that the same institution continued along similar lines gave heart to teachers in schools. Re-unions were held at the College, and each year the profession grew stronger in the conviction that gymnastics was the core of physical education, especially Swedish gymnastics.

CHAPTER 8

The Effectiveness of Physical Education

Supposed physical benefits of various systems of physical training will be analysed under the headings of mobility, strength, endurance, and skill. Much of our present-day knowledge is of recent origin and some of the claims made before 1908 were based on fallacies. It may be that physical education was actually harmful in certain circumstances. The main claim was that physical education improved health which in turn contributed to personal and national efficiency. This and other claims must be assessed in the light of contemporary knowledge.

The revelations of Booth and Rowntree and the various Committees and Commissions which reported after the Boer War generated a mass movement for improved social welfare. Housing, national insurance, pensions, public health and education were all issues in this reform movement. In the field of education the two major additions to the responsibilities of education authorities were feeding and medical supervision of school children. The concept of the school as a centre for instruction in a restricted range of knowledge was replaced by the idea of an institution which taught vocational skills; prepared children for the responsibilities of citizenship and parenthood; acted as the focal point for a child medical service; and at the same time tried to inculcate knowledge and values. Something of the new spirit of education was caught by Sir Robert Morant in the preface to the 1904 Schools Code:

> "The purpose of the Public Elementary School is to form and strengthen the character and to develop the intelligence of the children entrusted to it, and to make the best use of the school years available, in assisting both girls and boys, according to their different needs, to fit themselves, practically as well as intellectually, for the work of life... The school must afford them every opportunity for the development of their bodies, not only by training them in appropriate physical exercises and in encouraging them in organised games, but also by instructing them in the working of some of the simpler laws of health.... The corporate life of the school, especially in the playground, should develop that instinct for fair play and for loyalty to one another which is the germ of a wider sense of honour in later life" (1)

The health of the school child was seen as a foundation for national fitness and personal health. The Education Act (Scotland) of 1908 provided for medical inspection and school meals. Physical education was seen as a means of supplementing the school medical service by improving the process of nutrition and correcting minor physical defects. In 1909, the Syllabus of Physical Exercises, first published in 1904, was substantially revised. The new Syllabus was intended to be more Swedish in character and it was adopted in Scotland and England in the hope that Swedish gymnastics would improve health. An assessment of the validity of this view is called for. In this chapter the specific objectives of mobility, strength, local and cardio-vascular endurance, and claims for health will be evaluated in terms of the information available then and now. Whereas judgements can be made about methods of attempting to increase the strength and girth of muscle, or to increase vital capacity, it

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1. R.C.C.E., 1903-04. BPP 1904 xxi Code of Regulations, 1904, Introduction.

must be stated at the outset there is still no conclusive evidence that exercise improves health. Vaccination has been shown to be an effective method of controlling infectious diseases. Improvements in diet have led to a reduction in certain types of disease. Better housing, maternity clinics, X-ray units and regular screening of school-children have all contributed to improvements in national health. But all one can say about exercise is that although there appears to be a relationship between inactivity, obesity and certain types of coronary heart disease, there is no certainty that more exercise means better health. At the turn of the century, support for gymnastics (either with or without apparatus) was based on a belief in the beneficial effects of exercise on health, but this was largely a matter of faith. However, doctors like Holm and Roberts made this claim sincerely, and, in the light of their knowledge and experience, they believed that certain types of exercise were more effective than others. Their claims were supported by MacKenzie and Newman, who, even after he retired in 1935, still held to this view.(2)

The following summary of present-day knowledge of joint mobility, strength and endurance and skill can only scrape the surface of a substantial body of knowledge. Much of this information is of recent origin. For example, the whole field of exercise physiology was unopened until the pioneering work of A.V. Hill in the 1920s, and this has become a central field of knowledge for those involved in intensive physical activity.(3) The chemistry of muscle

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2. Sir G. Newman, The Building of a Nation's Health.(London, 1939)252 "We now know that exercise of the body and all its parts is essential to health".

3. A.V. Hill. Living Machinery (London, 1927).

action is still developing, but at the beginning of the century very little was known in precise terms about muscular activity.(4) It may be that with the information available to them our predecessors made sound judgements, but it is equally possible that even with the best of intentions their efforts might actually have been harmful to children. It is only by reference to present-day information that an accurate assessment can be made.

Every male and female has a morphological and functional potential which sets limits at birth for health and physical fitness.(5). Some people are born with a high potential for physical fitness and work performance and others are not, although the level of achievement is strongly influenced by motivation. Astrand believes that the dimensions and functions for maximal aerobic capacity can be favourably influenced by exercise during childhood and adolescence.(6) Conversely, insufficient exercise can result in a deterioration of function. Other environmental factors also influence fitness - for example, diet, sleep, atmospheric and living conditions. Even if it could be shown that a type of physical activity was theoretically capable of affecting muscles, joints or heart and lungs, the actual suitability would have to be evaluated finally in these hereditary and environmental terms. A system which was suitable for middle class children living in residential schools in which the environment could be controlled might be dangerous if applied to children half-starved and living in overcrowded slums. Any judgements about systems of physical training must therefore be tempered by these other consideratons.

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4. D.M. Needham. Biochemistry of Muscular Action. in G.H. Bourne (ed.). Structure and Function of Muscle. II (New York,1960),55.

5. H. Hoyman. Our Modern Concept of Health. In J.H. Humphrey et al (editors) Readings in Health Education.(Dunque, Iowa), 1964

6. L. Astrand and K. Rodahl. Textbook of Work Physiology. McGraw-Hill, New York, 1970.

Most of the exercises performed either without equipment or with dumb-bells, bar-bells or wands were designed mainly to retain or improve joint mobility. These involved the head and neck, the shoulder joint, the trunk, the hip, knee and ankle joints. Although it is accepted that mobility can be improved, there are considerable variations according to age and sex. Leighton has shown that some joints increase and other decrease in flexibility in groups of American teenage boys between the ages of 10 and 16.(7) He also showed that these patterns are quite different for 18 year olds from the same area. Munrow cites contrary medical opinion about the relative importance of ligaments and muscles in restricting mobility.(8) Although it is not clear how the process works, it is recognised empirically that mobility can be reduced (as in the case of atrophy when a joint is immobilised through injury). There is also the loss of flexibility which in Western societies normally accompanies the process of ageing. Both can be partially or completely offset by exercise. Individuals do regain full joint mobility through physiotherapy. Equally, many ballet dancers retain complete mobility well into middle age.

There are several basic problems in assessing the effectiveness of a mobility programme. For instance, it is only fairly recently

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7. J.R. Leighton, "Flexibility characteristics of males ten to eighteen years of age". Arch. of Phys. Med. and Rehabilitation. 37,494, 1956.

8. A.D. Munrow, Pure and Applied Gymnastics. 2nd Edition, (London, 1963), 59.
He quotes Wiles as follows: "The process of increasing the length of a muscle is often called 'muscle stretching' but this is hardly the right description because, as far as is known, muscle fibres cannot be stretched - they have to be made to relax more fully". Wiles points out that there is no evidence that ligaments as opposed to muscles are the limiting factor. Billig on the other hand is quite emphatic that ligaments play a principal role in mobility.
P. Wiles, "Essentials of Orthopaedics". (London, 1949).
H.E. Billig, "The Release of fascial ligamentous contractions in physical rehabilitation". Industrial Medicine, April 1945.

that Leighton's flexometer has overcome the main problem of goniometry, and norms can be established. (9) In the past it has been difficult to measure mobility and thereafter to set norms and measure improvement. Secondly, the requirements of sport are different from normal daily life, and the competitive swimmer, for example, may require greater ankle flexibility than the average individual. General physical training aims at some undefined norm without a functional criterion. The ability to touch one's toes without flexing the knees is of doubtful value in the normal course of events. Thirdly, the methods employed may actually inhibit rather than develop mobility. If a limb or joint has been injured the body develops a protective reflex which limits movement to prevent pain. Similarly, violent swinging movements are resisted by the protective reflex before the limb has reached the full extent of the existing range of movement.

For these various reasons it would be difficult to establish whether precise gains in joint mobility were achieved by Swedish gymnastics seventy years ago. Since it is not yet clear how the process works in physiological terms it can safely be stated that much of what passed for mobilising exercises was a matter of faith. It is unlikely that children were harmed by the work but it is also possible that few actually benefitted from it.

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9. H. de Vries, Physiology of Exercise. (Iowa, 1971), 363. Goniometry is the direct measurement of the angle of the joint in its extremes of movement. Leighton overcame the weaknesses of the classical protractor-like device by strapping a small instrument to a body part and recording range of motion in respect to a perpendicuar established by gravity.

Very little was known before the first World War about the process by which muscular strength is achieved. This is not to say that the pursuit of strength was ignored. Alexander included drawings of pulley-weight machines in his books and Sandow and many others marketed home body-building machines. It was not until 1917 that the concept of over-load (which has been the most important single idea in strength-training) appeared in the literature.(10) The important point was to do more work (i.e. to overcome more resistance) in a given unit of time by increasing the velocity of the limb applying the force. In a subsequent variation Delorme propounded a different notion called the principle of progressive resistance in which velocity was standised and emphasis was placed on building up the load to be moved.(11) Thus, progression through the speed of the movement was seen as secondary to the amount of force involved in each muscular contraction. It is now accepted that both methods are effective in increasing strength.

The source of muscular power and strength is in the muscle fibres. Each muscle is composed of a large number of separate fibres, gathered together in a series of units, each of which is controlled by one motor neuron. The total strength of a muscle varies according to the state of the motor units which can be developed through usage up to their innate capacity. The object of all strength training is to maximise the potential of each muscle-unit. When a demand is made on

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10. A.D. Munrow, Gymnastics. 107
Lange first proposed the idea as follows: "Only when a muscle performs with greatest power, i.e. through the over-coming of a greater resistance in a unit of time than before, would its functional cross section need to increase"

11. ibid, 108.
"...Delorme generalised his methods in the statement that low repetitions with high resistance produced power whereas high repetitions with low resistance built muscular endurance".

a muscle, the nervous system monitors the effort required and innervates the appropriate number of motor units. In a maximal effort every unit is called into action, and through constant exposure the weaker units are strengthened.

Like any other efficient machine the human body needs fuel and a system of checks and gauges to maintain itself in working order. The main sources of fuel for muscular activity are the carbohydrates and proteins contained in our food. In the digestive process the body abstracts carbohydrates and converts them into protein, salts, water and glycogen; and in a brief sudden effort this stored glycogen can meet the immediate demand for fuel. This process is sparked off by the splitting of other compounds in muscle called Adenosine Triphosphate (ATP) and Creatine Phosphate.(12) When muscular activity takes place in this way, without consuming oxygen, it is referred to as an anaerobic activity. The oxygen requirement (RO_2) and the volume of oxygen consumed during exercise (VO_2) are proportional to the intensity of the work. When the RO_2 does not exceed the VO_2 the person is performing within aerobic limits (he has sufficient oxygen to maintain the activity). If there is insufficient VO_2 an oxygen debt is built up which can eventually lead to collapse (anaerobic activity). During short periods of intensive anaerobic activity carbohydrates are burned up rapidly. Sprinting is a good example of this kind of activity. The implication in terms of the ability to sustain work is shown in figure 1.2(13)

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12. H de Vries, Physiology of Exercise. 21

13. J. Digennaro, Individualised Exercise and Optimal Physical Fitness. (Philadelphia, 1974), 5.

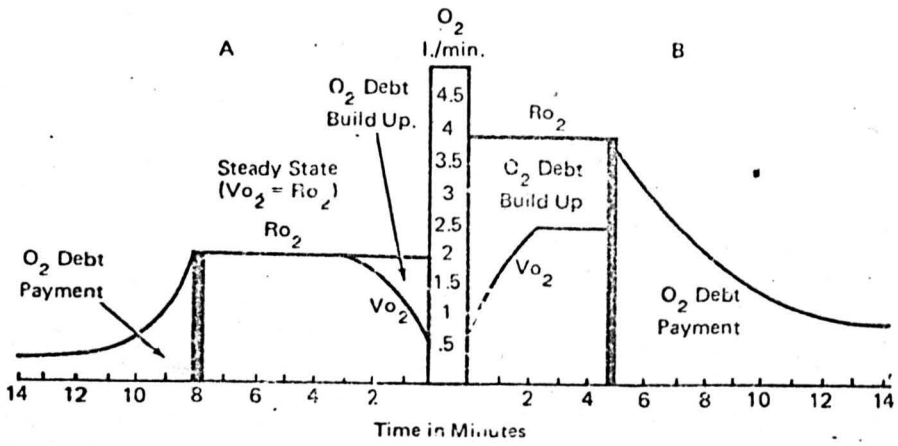

FIGURE 1.2. Aerobic and anaerobic work. A, During aerobic work there is minimal O_2 debt buildup that ceases when Vo_2 equals Ro_2. O_2 debt payment takes place quite quickly (as compared to a large O_2 debt buildup). B, This work task is anaerobic because the maximal aerobic capacity of the performer is not sufficient to meet the Ro_2 of the task. It cannot be performed for more than five minutes and O_2 debt payment will involve a considerable period of time.

From J. Digenarro. (1974) 5.

The continued ability of muscles to contract depends either on the immediate rebuilding of ATP which comes from glycogen or oxygen stored in the muscles or other compounds, or from the supply of oxygen. If the exercise is sufficiently intense to outstrip these reactions there is a build-up of lactic acid in the muscles which can eventually seize up (14). Therefore, endurance, which is the ability to continue work, relies on the supply of glycogen and oxygen and the elimination of lactic acid. This leads to a definition of fitness as the ability to counteract fatigue during sustained exercise. It also implies that improvements in local endurance develop from regular exposure to situations in which the muscles are subjected to continuous vigorous exercise.

The Swedish system offered opportunities for the development of strength. For instance, pull-ups on beams, rope-climbing, sit-ups and trunk curls from hang position on the wall-bars would all have

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14. O. Astrand, "The Human Machine". Journal of Health, Physical Education and Recreation. 5, part 3, 1972, 22.

increased the strength of certain large muscle groups. Each exercise had a progressive build-up which would broadly fit the concept of progressive resistance and if performed correctly, increased strength would have resulted. The problem with under-nourished children is to find a base-line from which to start. Physically demanding work may be mentally as well as physically stressful. All one can say is that of the systems for schools which were popular in 1905, Swedish gymnastics on apparatus was the most likely to have produced gains in strength.

Any of the leg exercises shown in the various systems would have improved the local endurance capacity of the leg muscles if a high number of repetitions or high speed was introduced, and the use of dumb-bells would have produced limited results in other parts of the body. The main difficulty was that the moveable equipment was very limited in weight, the normal dumb-bell weighing only 2-6 lbs. Ropes and window ladders offered better opportunities for local endurance, since part of the body weight was taken on the arms for reasonably long periods. This process of working at sub-maximal capacity over extended periods was missing from free gymnastic exercises and also from vaulting and other large equpment skills. The latter required a short explosive expenditure of energy and considerable reserves of strength. There is no indication that the authors of gymnastic systems fully understood the differences between strength and endurance. Therefore, the exercises were not arranged to affect these different qualities. Nevertheless, Swedish gymnastics offered many opportunities of using the body weight as resistance and the system had the capacity to produce strength. In reality, teachers became pre-occupied with unimportant details, like the angle of the feet in the position of "Attention" or whether the palms should face down or forward in an arm extension. Early issues of the Journal of Scientific Physical Training included many of these articles.

McIntosh points out that even George Newman, who was an enthusiastic supporter of Swedish gymnastics, had to admit that this precision led to boredom and monotony for the children (15):

> "Even its most wholehearted supporters would admit that the Swedish system has certain shortcomings and that there remains opportunity for research and experiment with a view to perfecting the exercises and their application...."

To summarise, the system was capable of producing gains in strength and endurance, but this would have required gymnasia equipped for Swedish gymnastics, trained teachers and small classes. All of these requirements were to be found in some of the new higher grade schools, but in the vast majority of cases the system failed because of poor facilities, a shortage of specialists and large classes in elementary schools. However, some advocates of physical education were convinced that children did become stronger through taking part in physical education. One explanation is that this was simply part of the normal process of growth. Individuals vary in strength, power and endurance and fitness, and the main biological differences are those of age and sex. According to Tanner increases in strength follow growth spurts, i.e. at age 14 for boys and age 12 for girls (16). Growth curves for muscle and bone widths follow the general height curves. Since weight represents a mixture of these various components, its pattern of growth is somewhat different. An increase in weight may be due to bone or muscle or fat. Most of the growth spurt in height is attributable to trunk rather than leg growth. The spurt in muscle growth occurs after the last skeletal peak. Tanner concludes that

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15. P.C. McIntosh, Physical Education in England. 181. McIntosh points out that this kind of comment appeared in the annual Reports of the Chief Medical Officer from 1909 up to 1914. The above quotation is from the report for 1914 (192).

16. J. Tanner, Education and Physical Growth. 28. See also appendix 5, "Dr. W.L. MacKenzie's views on the effects of physical education".

"...considered absolutely, power, skill and endurance all increase progressively and rapidly throughout adolescence" (17). It would be all too easy to attribute to gymnastics increases in power and strength when in fact this is a natural phenomenon.

Since carbohydrates are the fuel from which glycogen is formed, a proper diet would be an essential prerequisite for anyone undertaking activities requiring strength or endurance (18). Children who were suffering from any significant level of malnutrition would be incapable of sustaining vigorous physical activity. Without adequate reserves of fuel and energy they would quickly have reached exhaustion and collapsed. Any pulmonary or cardiac weakness would render this process of pushing hungry children to exhaustion extremely dangerous. Fortunately, physical education was a largely static activity involving nothing more vigorous than marching.

An examination of the content of gymnastics between 1870 and 1904 would suggest that little effort was made positively to develop the heart and lungs. That the general functioning of these organs was understood is shown by the Army Manual of Physical Training. The heart is like a muscle which can be developed through exercise, but for many years it was feared that vigorous exercise would strain or even damage the heart (19). Henschen, in 1899, discovered that skiers had greatly enlarged hearts, and it was mistakenly thought that this was a

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17. ibid.

18. E. Asmussen, "Some physiological aspects of fitness for sport and work". Proceedings of the Royal Society of Medicine, 62, November 1969, 1160.
"Carbohydrates and fats are the sources of energy in exercise. The carbohydrate stores, i.e. the glycogen in muscles and liver are restricted - whereas the fat stores are relatively unlimited. In moderate exercise a mixture of carbohydrate and fat is used as fuel, but when exercise becomes heavier, relatively more carbohydrate is burned".

19. A. E. Parsonnet and A. Bernstein, "Heart strain. A critical review. the development of physiologic concept." American Institute of Medicine. 16, 1942, p1123.

pathological conditon when it is actually physiological hypertrophy (20). There is a substantial body of evidence that if the heart is sound it will not be harmed even if subjects are pushed to exhaustion. Morehouse and Miller quote a study in which 110 school children aged 6 to 15 rode to exhaustion on a bicycle ergometer:

> "In the course of the study of exhausting exercise there were 16 cases of collapse...In all cases the heart sounds became so faint that they could hardly be heard. There was a marked drop in heart rate and systolic blood pressure after exercise; suggesting that the collapse was due to a condition resembling shock. There was no evidence of acute dilation of the heart in any of the cases and recovery was complete in a few hours in every case" (21)

A muscle which fails through the build-up of lactic acid is temporarily incapable of further performance but it will recover through rest. However, exposure to total bodily exhaustion leading to collapse involves a considerable psychological stress in addition to purely physical discomfort or pain, and if there is a weakness in the heart intensive exercise could be very dangerous. In the investigations carried out by Hay and Mackenzie on behalf of the Royal Commission on Physical Training in 1902 it was shown that 4.3 per cent of the 1200 children involved were suffering from some form of heart condition (22). In view of these figures it is as well that a fairly cautious approach was adopted to intensive exercise. If advocates of Swedish gymnastics had been able to identify children with heart or lung disorders, would they have achieved cardio-vascular effects with the other pupils? Using the normal gymnastic tables, it is unlikely. It is necessary not only to raise the resting pulse-

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20. Quoted in C.Healy, Methods of Fitness, (London, 1974), 13.

21. L.E. Morehouse and A.T. Miller, Physiology of Exercise, (London, 1953), 193-194.

22. R.C.P.T. (1903), 1, Report, 27, para 143.

rate substantially, but also to maintain these high levels for several minutes on end. None of the popular systems claimed improved cardio-respiratory efficiency as an important aim, and the content of these systems would not in any case have achieved these effects. Many of the current works included sections on anatomy and physiology. but there was a substantial gap between knowledge of the functioning of the heart and exercises designed to make improvements (23). Heart disorders provided one of the strongest arguments for medical supervision, and serious cases might possibly have been adversely affected by gymnastics. Generally the exercises were not sufficiently violent to constitute a major risk.

It is clear that earlier systems were concerned with learning patterns of movement, either individually or in unison with others. Knapp refers to the following two different levels of skill in sport:

(a) "A skill may refer to an act in which the aim is the production of some pattern of movements which is considered to be technically sound" (24)

(b) "A skill may refer to an act or a whole collection of actions in which there is a clearly defined goal or set of goals" (25)

Examples would include players making adjustments in passing a ball according to many variables such as weather and movement of team-mates and the opposition. This involves an assessment of a fluid environment, a decision to invoke a particular technique, and the actual use of the technique.

The kind of movements involved in the free-standing section of Swedish gymnastics were obviously of type (a) above in which there are very few

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23. Sir Frederick Treves, Physical Education in Stevenson and Murphy. Principles of Hygiene, Vol. 1 (London, 1883). Cruden added a section on anatomy and physiology to his Manual in the 1896 ediction.

24. B. Knapp, Skill in Sport.(London, 1964),2.

25. ibid, 3.

changes in the environment within which the skill is practised and performed. The basic assumption underlying the progressive table of exercises was that as each exercise was mastered the body was ready to deal with the next level of difficulty. It was thought that a store of ability was being created which made successive efforts easier, until the response was automatic. This is the sense in which Knapp defines the general quality of skill as "...the learned ability to bring about predetermined results with maximum certainty, often with the minimum outlay of time or energy or both" (26). Looking at the exercises in the various manuals it is likely that those without apparatus would be well within the grasp of most children. In fact, the only break-down might have come from explanations which used technical terms beyond pupils' understanding. All the manuals insisted on uniform simple explanations accompanied where possible by demonstrations, and this possible barrier to learning was thus removed.

It is shown in Appendix three that some of the vaulting skills in Swedish gymnastics would have been within the ability of some 12-14 year-olds. Certainly vaulting was a popular activity in the Boys Brigade before the end of the 19th century, but the teacher faced the problem of larger numbers. The claims for vaulting were less easily related to health and on these grounds alone it was a low priority. To summarise, some children would have been capable of learning vaulting skills but the main emphasis was on purely physical effects.

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26. ibid, 4.

Military training in schools represented a certain set of values - patriotism, loyalty, self;sacrifice, and obedience. Athleticism was geared to a different set of values - elitism, competition, leadership. Advocates of these ideologies found ways of using physical activity as a hub around which values could revolve. What were the values and methods of the health movement? Chief among them were efficiency and fitness.

There are many aspects of efficiency - economic, industrial, military, physical and educational, to mention but a few. The question to be answered in this section is to what extent physical education in schools contributed to personal efficiency and fitness. In a memorandum on medical inspection published shortly after the passing of the 1908 Education Act, Struthers wrote:

> "Health in a healthy environment is the first condition of personal efficiency.....The School Board should satisfy themselves that every pupil under their charge is fit to profit by the education offered. This they can do only by medical examination. They should also ensure that as far as practicable, the health of the pupils is maintained at a proper standard. This they can do only by constant medical supervision." (27)

By this definition the justification for personal efficiency was to ensure that children were fit to profit from compulsory State education. This argument had been advanced by Dr. Crichton Browne and others during the furore about over-pressure. It was seen by Dr. George Newman as the main justification for adding medical supervision to the responsibilities of education authorities. (28) Struthers, on the other hand, suggested that each

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27. R.C.C.E., 1908-09, BPP, 1909, xxi, section O, 42-52. Memorandum on the Medical Examination and Supervision of School Children. S.E.D. 31st March 1909.

28. Sir G. Newman. A Nation's Health. 194-195.
"..... its primary purpose was not to crease a healthy people, but to enable every school child to take full advantage of the education provided him by the State."

individual should be led further, to recognise his civic and national responsibilities, and that efficiency was connected with economy (29).

> "The broad requirements of a healthy life are comparatively few and elementary, but they are essential to the continued progress of the community. If rightly administered, the new enactment will be economical in the highest sense of the word. Its justification will be in the decrease of sickness and incapacity among children, and in the ultimate decrease in the inefficiency and poverty that arise from untreated or unprevented physical disabilities.....with the object of discovering what can be done to promote the highest personal efficiency, both as a present pupil and as a potential citizen." (30)

In fact the introduction of physical training as it was practised in 1908 was unlikely to have made pupils more efficient by these criteria. We know now that exercise does not reduce sickness or increase resistance to disease. Perhaps what matters most is that Struthers, MacKenzie, Newman and many of their colleagues believed at that time that exercise had those effects. A more realistic claim made in the Memorandum was that physical training could, by helping to remove deformities, become "one of the most important methods of medical treatment, both curative and preventitive." In the light of present day knowledge it is apparent that the path to increased efficiency and fitness lay in a more complete understanding of the relationship between food intake and energy expenditure. Unfortunately the science of nutrition was in its infancy in 1908. Atwater's calorimeter (measuring the heat produced by an individual) was only designed in 1892. This enabled scientists to estimate the energy value of various foods and Douglas soon produced a form of indirect calorimetry. Pyke explains:

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29. This argument is still popular today. The number of working days lost through illness can be measured in purely economic terms.

30. R.C.C.E., 1908-09. BPP, 1909, xxi, Section O.
S.E.D. Memorandum. Medical Inspection, 42.

> "This allows the gases breathed out while the individual being studied is taking part in various types of activity to be collected and the carbon dioxide and oxygen content of the total volume analysed later. By this means the expenditure of energy measured in kilocalories - can be calculated for all sorts of work or for such activities as walking, walking upstairs or swimming. Since, if the person in question is not to lose weight, calories expended must be replaced by the food eaten, these measurements enable the requirements in terms of energy value to be obtained."(31)

The importance of accessory food factors in diet (subsequently called vitamins) was only established in 1905-1906 and the classification of proteins according to the combinations of amino acids in them was summarised and applied in about 1909.(32)

It appears from the evidence of various surveys and reports published by individuals and Committees between 1885 and 1905 that absolute starvation was rare but dietary imbalance was common. This led to 'deficiency diseases' due to an imbalance of nutrients, for instance, a lack of vitamins. The most common of these were skin diseases such as scurvy caused by a deficiency of vitamin C, and rickets, resulting from a shortage of vitamin D. Vitamin D is essential to the correct development of bones and teeth and deficiency led to knock-knees or bow legs - conditions which were common in the cities and especially in Glasgow. Other results of wrong diet are stunted growth (lack of the correct type of protein): loss of wieght; loss of vigour; and anaemia. Extreme cases combining two or more dietary deficiencies will display other symptoms such as loss of hair, cracked finger-nails, sores and loss of vision. For children suffering from these conditions (and according to surveys this applied to a large proportion) vigorous physical activity would have been almost impossible. Corrections in the diet would have been a pre-requisite to physical performance.

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31. M. Pyke, Man and Food. (London, 1970), 99.
32. ibid, 101-105.

Dunlop had identified these problems in his studies of diet in relation to energy expenditure in Scottish prisons.(33) He was concerned mainly with the quantity of daily food intake required to offset different amounts of work, and Rowntree afterwards confirmed his figures.(34) Thus, apart from balance in diet, the sheer amount of food intake was also basic to physical work capacity. Contemporary research shows that there is a considerable variation between the daily requirements of different activities and occupations, and at different ages and stages of growth and development.(35)

Munrow has perhaps identified the fundamental difference between the early Edwardian approach to physical education and present day views.

> "This has been the big shift in emphasis - away from the concern with appearance towards a concern with function..... But a change from regarding the body as a statue to regarding it as a machine invites fresh study of acceptable physical aims."(36)

Efficiency differs from fitness. One can be efficient without being fit and the corollary is also true. The argument advanced frequently by Dr. Crichton Browne and many of his successors was that a minimum level of fitness was required before a child could meet the strain of compulsory school attendance. Generally, in dealing with fitness one must answer the question fit for what? Having identified the task one devises methods of achieving fitness. The next stage in the process should be to set up methods of evaluating whether the level of fitness has been sufficient for the task. There is no evidence in the lengthy annual reports on school medical inspection that functional physical capacity was measured.(37)

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33. J.C. Dunlop, D.N. Paton and E. Inglis, Diet of the Labouring Classes. (Edinburgh, 1902)

34. S. Rowntree. Poverty. 94-97.

35. J.V.G.A. Durnin and R. Passmore, Energy Work and Leisure. (London, 1967), 115.

36. A.D. Munrow, Physical Education. (London, 1972), 30.

37. R.C.C.E. 1912-13, BPP 1913. xxii section E. Dr. W. Leslie Mackenzie's First Report on Medical Inspection of School Children.

Other school subjects were assessed by written examinations. By Crichton Browne's criteria, effective physical education would have reduced the incidence of headaches. By Leslie Mackenzie's standards, it would have increased height and weight and these measurements were faithfully recorded by school medical officers. However the precise contribution of physical education was not separated out from the effect of school meals or medical treatment. More sophisticated forms of measurement (including for example dynamometers) were not developed and the whole area of cardio-respiratory function was left untouched by teachers of physical education as a method of evaluating performance. As Munrow observes, the evidence of improved fitness was in the appearance of the body rather than in more efficient functioning.

The intention in introducing Swedish gymnastics was to improve physique and help to cure diseases, defects and deformities. The system itself was capable of improving mobility, local endurance, muscular strength and gymnastic skill, and of the methods available at that time, it was probably the most suitable for use in schools. It was not intended to substantially improve cardio vascular efficiency and physical education was of dubious value in that area. There were serious obstacles to achieving the objectives of the health movement which can be described as efficiency and fitness. Knowledge of physiology of exercise, and the inter-relationship of diet and exercise was either not sufficiently recognised, or did not appear until later. For many children extra exercise without extra food would have constituted another form of over-pressure. Evaluation of physical education was subjective, measured if at all, by gains in height and weight and appearance rather than improvements in function.

Conclusion

Physical education, in the shape of drill, was first introduced in an effort to deal with the problems of discipline in State schools. Drill had been used successfully in the Army to establish order and discipline, and therefore the School Boards elected in 1873 employed ex-Army drill instructors. Those who saw the schools as a training ground for military potential campaigned unsuccessfully to include the full Army drill system in elementary education. In the 1880's physical education was also advocated as a remedy for the health disorders, commonly summarised as over-pressure, which were alleged to have increased as a result of compulsory school attendance. However, it was only when a large number of Army recruits were rejected as unfit during the Boer War that reports of grinding poverty assumed new significance, since it was claimed that there was a relationship between poverty, ill-health and poor physique. The condition of the people became a major public issue and 'national efficiency' emerged as a popular political slogan. How could a successful imperialist nation expect to recruit its army and navy from a race who were physically unfit and degenerate? The health of school children became a matter of wide public concern and out of this debate a new role emerged for physical education in schools.

The medical profession took the view that a comprehensive approach was needed, incorporating school meals, medical inspection and scientific physical training and this view was shared by the Trades Unions. When it became clear that public opinion supported this range of measures, senior civil servants encouraged school boards to proceed before the statutory changes had been made. Improvements were made in the provision for physical education. It

was made compulsory for all student teachers; new regulations were introduced to encourage the in-service training of teachers; advisers and specialist teachers of physical education were appointed by the School Boards; and full-time courses for specialist teachers of physical education were established. A national system bearing close similarities to the Army system of physical training was produced by the S.E.D. for use in elementary schools. The majority of new secondary schools included gymnasia equipped for Swedish gymnastics.

It appears that the turning point leading to acceptance of physical education was the poor performance of the British forces in South Africa. Later, the results of surveys which showed that poverty, disease and deformities existed on a large scale were put forward as proof that physical deterioration threatened Britain's position as a leading imperialist nation. Physical education was one of the reforms which, it was hoped, would ward off this threat to national prosperity. A number of influences have been identified which ensured that physical education was seen to be linked with improved health. Of these, the medical lobby, through the medium of the British Medical Journal, was perhaps the most powerful - no other group championed the cause of physical activity with such effect. In the field of education, the private schools were pioneers, strongly influenced by Almond of Loretto. Private individuals such as George Cruden, General Chapman and Lord Brabazon also helped to draw attention to the value of physical education but it was the medical lobby which concentrated on the systematic nature of Swedish gymnastics. It now appears that there were errors and inconsistencies in the arguments advanced in favour of physical education, but in many instances this arose from lack of knowledge. There is still no substantial evidence that physical education

improves health, but acceptance of the importance of the subject was based on that questionable premise.

APPENDIX 1

An assessment of George Cruden's system of physical education

According to his manual Cruden considered that up to the age of 12, children should not be expected to take part in vaulting or other gymnastic skills on apparatus. The First Division of his system contained marching, free gymnastic exercises, and exercises with light dumb-bells (2-6 lbs), Indian clubs, hoops and barbells. It also covered rifle, bayonet and sword activities but these were intended for use with the Volunteers. The exercises for young children were normally performed in time to a musical accompaniment, and apart from marching the children stood still while going through a selection of arm, leg and trunk movements. The arm movements were the same whether performed with or without dumb-bells or barbells and consisted of bending and stretching upwards, sideways or forwards. Similarly, trunk movements were performed in frontal or lateral planes or as twisting movements around the vertical axis. The movements were identical with those illustrated in Alexander's first two books (1) and Chesterton's manual (2). There are differences in wording and illustrations but the movements are very similar (table 9). In the case of marching even the wording is identical and it appears that Cruden and Chesterton were drawing on a common source (the Army Drill manual).

Cruden Manual 1896, 41

> "...the body straight and inclining forward so that the weight of it may bear principally on the fore part of the feet; the head erect but not thrown back; the chin slightly drawn in, and the eyes looking straight to the front".

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1. A. Alexander, Modern Gymnastic Exercises. (London, 1887) and A. Alexander, Modern Gymnastic Exercises. (London, 1890)

2. T. Chesterton, Manual of Drill and Physical Exercises. (London, 1893)

ibid, 42
"On the word "One", raise the arms from the elbows, left hand in front of the centre of the body, as high as the waist, palm upwards; the right hand as high as the right breast, palm to the left front; both thumbs separated from the fingers, and the elbows close to the side".

Chesterton Manual, 1897, 27
".....the body straight and inclined forward, the weight being principally on the fore part of the feet; the head erect, with the chin slightly drawn in; the shoulders square; and the eyes directed straight to the front.
ibid, 30
"On the word "One", straighten the fingers, raise the forearm, left hand in front of the centre of the body as high as the waist, palms upwards; the right hand as high as the right breast, palm to the left front; both thumbs separated from the fingers, and the elbows close to the side".

It is not surprising that the work of these two men should be so similar. Chesterton joined the Army in 1868 at the age of 17 and was appointed as a sergeant instructor at the Army School of Physical Training at Aldershot two years later. He served at Aldershot for eighteen years before accepting an appointment with the London School Board as Organising Teacher of Physical Exercises in 1888. Cruden joined the Volunteers in 1867 as a 17-year old and in 1885 as a commissioned officer attended a course at Aldershot. He was the first Volunteer Officer ever to be awarded the Certificate of Superintendent of Gymnasia. At that point Chesterton was still on the staff of Aldershot and both men were familiar with the Army system of drill and physical training. Both included in their manuals various types of turning, forming ranks, slow and quick marching, opening and closing ranks. The difference between their systems was one of emphasis. Assuming that the sections on apparatus work in Cruden's book were not intended for children, comparisons can be made between the amount of space allocated to free gymnastic exercises. Cruden gave 17 pages, whereas Chesterton

A. Alexander, Modern Gymnastic Exercises. (London, 1887)	no of pages	G. Cruden, Manual of Musical Drill and Physical Exercises. (London, 1889)	no of pages	T. Chesterton, Manual of Drill and Physical Exercises. (London, 1893)	no of pages
Light dumb-bells	26	Marching Drill	5	Drill	26
Bar bells	26	Dumb-bells	24	Marching	6
Double bar bells	22	Indian clubs	33	Head movements	2
Indian clubs	30	Gymnastic exercises	17	Arm movements	8
Running musical maze	8	Hoop drill	10	Trunk movements	14
Parallel bars	4	Bar bells	20	Leg movements	10
Horizontal bar	6	Rifle	17	Hurrying movements	8
Trapeze	6	Bayonet	13	Balancing	8
Swinging rings	5	Sword	14	Shoulders	26
Vaulting horse	5	Vaulting horse	9		
		Vaulting bar	3		
		Parallel bars	15		
		Rings	7		
		Row of rings	14		
		Horizontal bar			

Table 9

Content of various textbooks on drill and gymnastics published between 1886 and 1891.

allocated the whole of his book to free standing work, and unlike Cruden, he had strong reservations about the use of dumb-bells.

From a comparison of Cruden's work for younger children with that of Alexander and Chesterton it would seem that the exercises were very alike but Cruden recommended fewer repetitions of exercises than Alexander. For example, Cruden suggested 6 repetitions of dumb-bell raising over-head compared with Alexander's suggestion of 32 times. The differences in emphasis, the use of light equipment, and the addition of a musical accompaniment do not significantly alter the fact that in marching and free-standing exercises, all three systems are recognisably drawing on a common source.

The emphasis on vaulting apparatus in the Second Division of Cruden's work corresponded broadly with Alexander's first volume on Modern Gymnastic Exercises, but the descriptions of skills in the two books were quite different. It appears that Alexander drew upon his experience of competitive gymnastics, but it is clear that Cruden copied sections of McLaren's 1869 publication, "A System of Physical Education" and transferred them intact to his own book. One example of identical wording is given below and there are many others. In table 10 it is shown that every exercise on parallel bars listed in Cruden's book had already appeared in the earlier publication. Even the illustrations are identical.

> McLaren Physical Education (1869 edition). Cruden Manual (1889 edition), 23
>
> "...elevate the lower limbs to the front until the feet are as high as the face; from this, let them fall in a full sweep, and passing between the bars, rise to the rear until they are immediately above the head; during the latter part of this oscillation, let the arms slowly bend until the shoulders are as low as the bars, the head between them; (Fig. 14 McLaren; Fig. 21, Cruden); slowly let the lower limbs with the entire column of the body in position incline and gradually descent to the right (Fig. 15, McLaren; Fig. 22, Cruden); until the feet come to the ground".

There can be little doubt that the section on apparatus was taken direct from McLaren's book. Since Cruden also admitted that the sections on rifle, bayonet and sword were suggested to him by Sergeant Nolan of the Aldershot staff, one can safely state that Cruden's Manual was very strongly influenced by systems which McLaren drew up for the Army in 1861, and the amendments which were introduced over the next twenty years.

Title of activity on Parallel Bars used in both books	Page number in Cruden	McLaren
Travelling		
1. To walk along the bars	225	-
2. To walk along the bars backwards	226	-
3. The single march forwards	226	248
4. The double march forwards	227	250
5. The single march backwards	227	249
6. The double march backwards	227	250
Swinging		
1. To clear the bar by the front	228	251
2. To clear the bar by the rear	228	252
3. To rest on the right bar and clear the left in front	229	252
4. To rest on the right bar in rear and clear the left by the rear	229	254
5. To rest on the right bar in front and clear it by the rear	230	254
6. To rest on the right bar in the rear and clear it in front	230	256
7. To rest on both bars and clear the right in front	231	257
8. To rest on both bars in the rear and clear the right bar in front	231	257
9. To pass by the rear by the single swing	232	258
10. To pass by the front by the double swing	232	263
11. To rest in front and clear the bar in the rear by the single swing	233	259
12. To rest on both bars in front and clear the single bar in front by the double swing	233	265
13. To rest on both bars in front and clear the single bar in the rear with the single swing	234	260
14. To rest on both bars in front and clear the single bar with the double swing	234	265
Combinations		
1. The single march forwards and rest on the single bar	235	265
2. The double march forwards and rest on both bars	235	268

3.	The single march backwards and rest on the single bar	236	267
4.	The double march backwards and rest on both bars	236	269
5.	The single march forwards with bent arms	237	-
6.	The single march forwards with straight arms and handspring	237	-

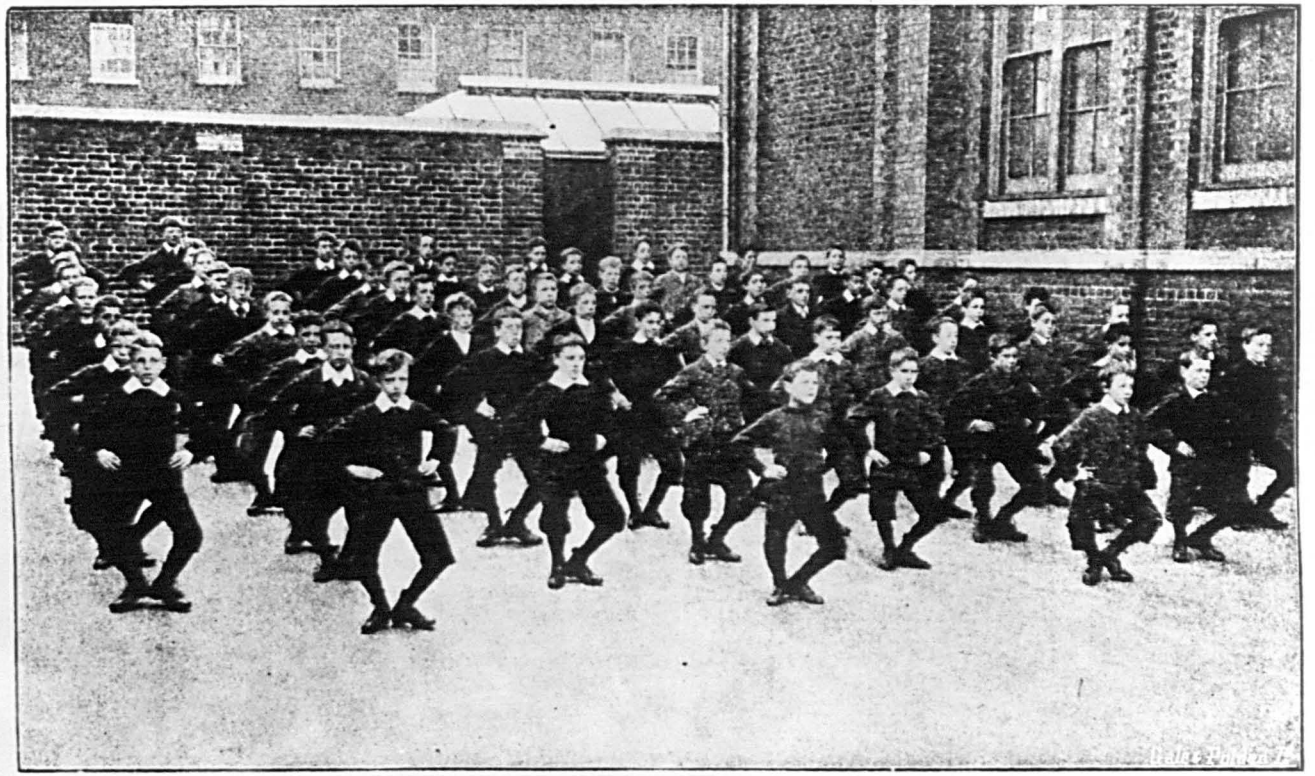
Table 10

Comparison of Parallel Bar exercises in Cruden (1889) and McLaren (1869)

APPENDIX 2

Illustrations of Thomas Chesterton's system of physical education.

PLATE 16.

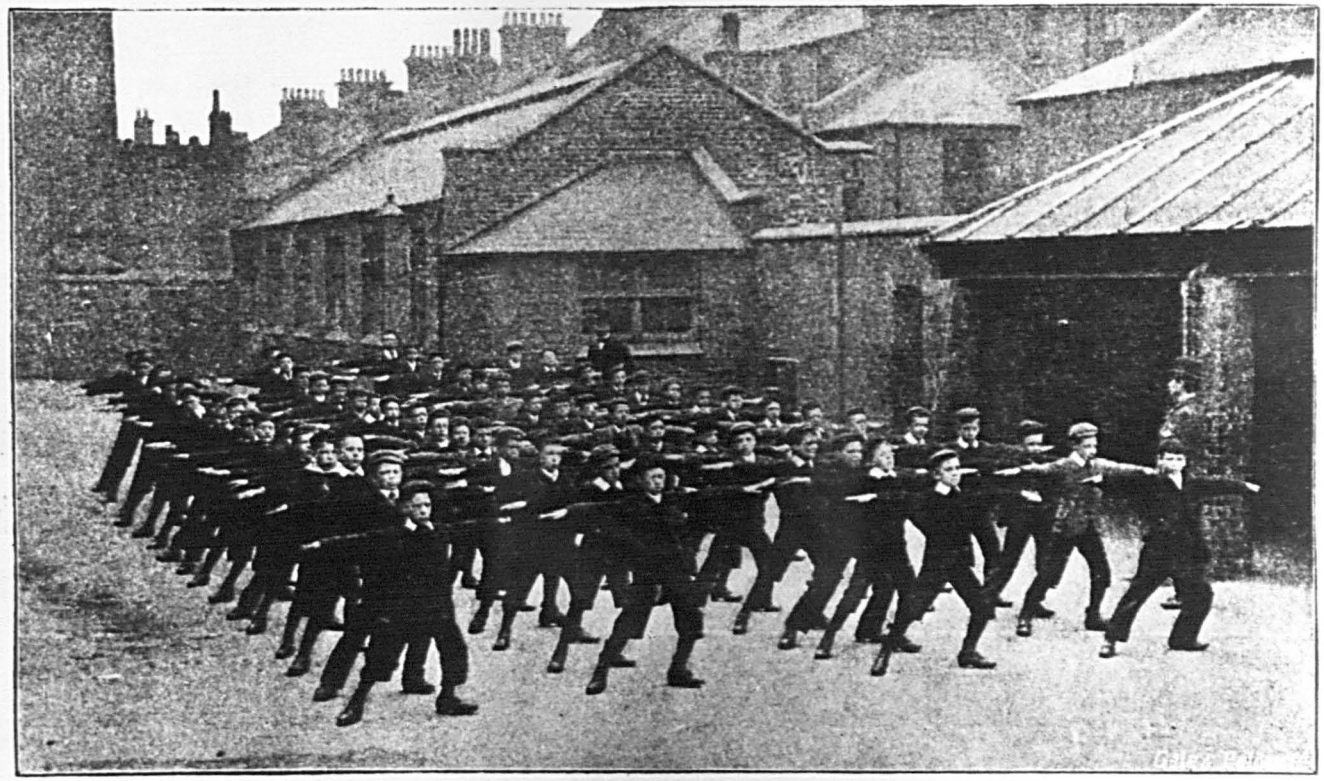


LEG AND HIP MOVEMENTS, FIRST PRACTICE, "KNEES—BEND."

(*Two Classes. Ranks opened in Second Method.*)

HONEYWELL ROAD BOARD SCHOOL, LONDON, S.W.

PLATE 21.

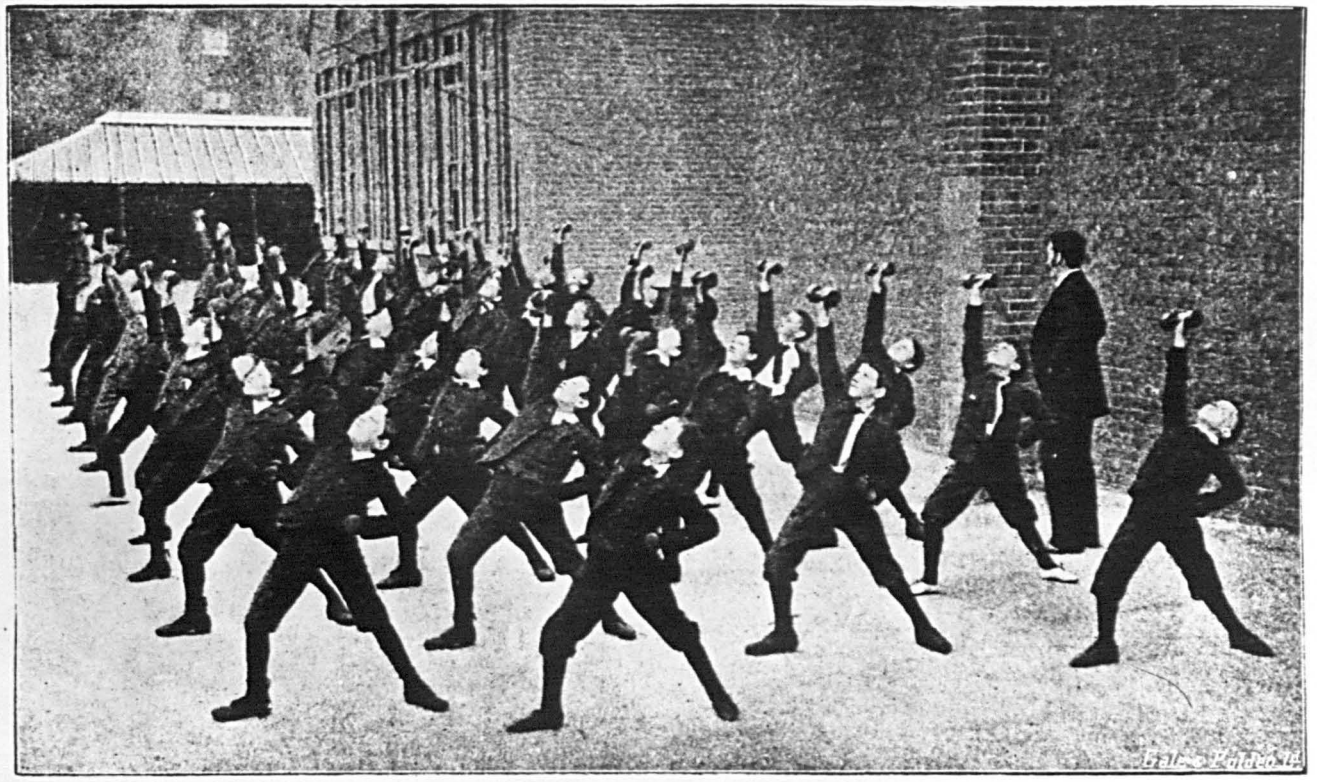


SIDE LUNGING WITH ARM MOVEMENTS, THIRD PRACTICE, "LEFT SIDE—LUNGE."

(Ranks opened in Third Method.)

BATTERSEA PARK BOARD SCHOOL, LONDON, S.W.

PLATE 23.

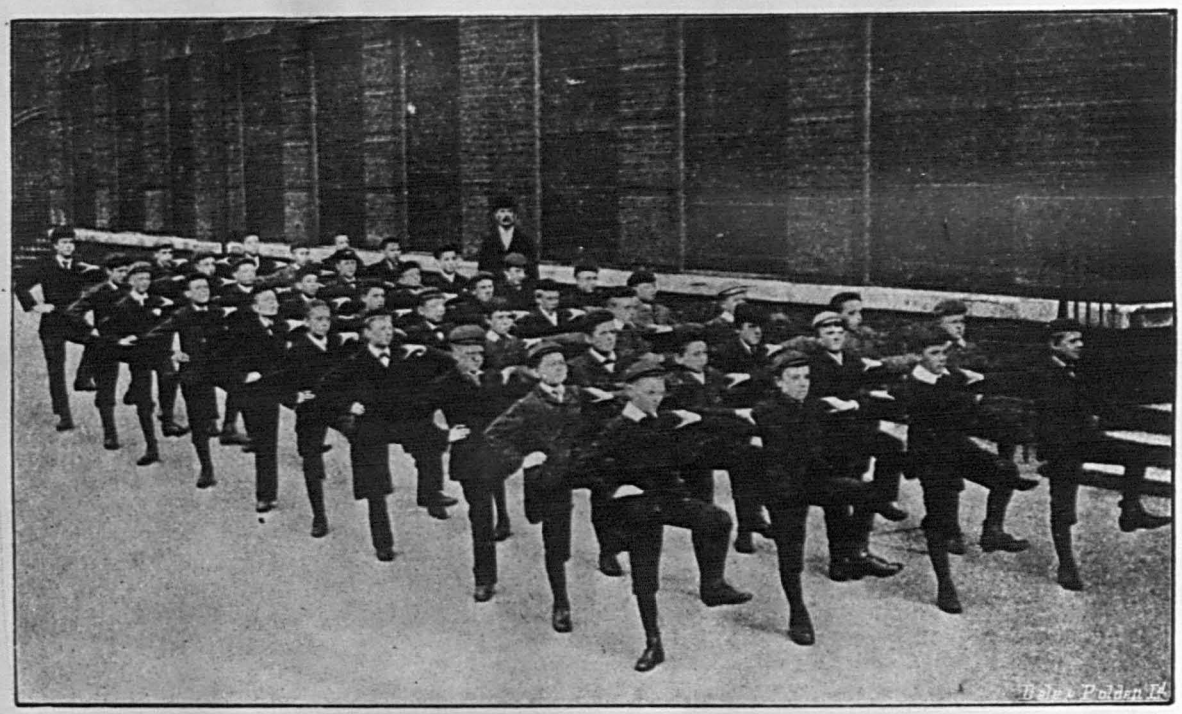


DIRECT LUNGING WITH ARM MOVEMENTS, SECOND PRACTICE, "RIGHT--LUNGE."

(Class dressed at half interval. Ranks opened in Third Method.)

LYNDHURST GROVE BOARD SCHOOL, LONDON, S.E.

PLATE 25.

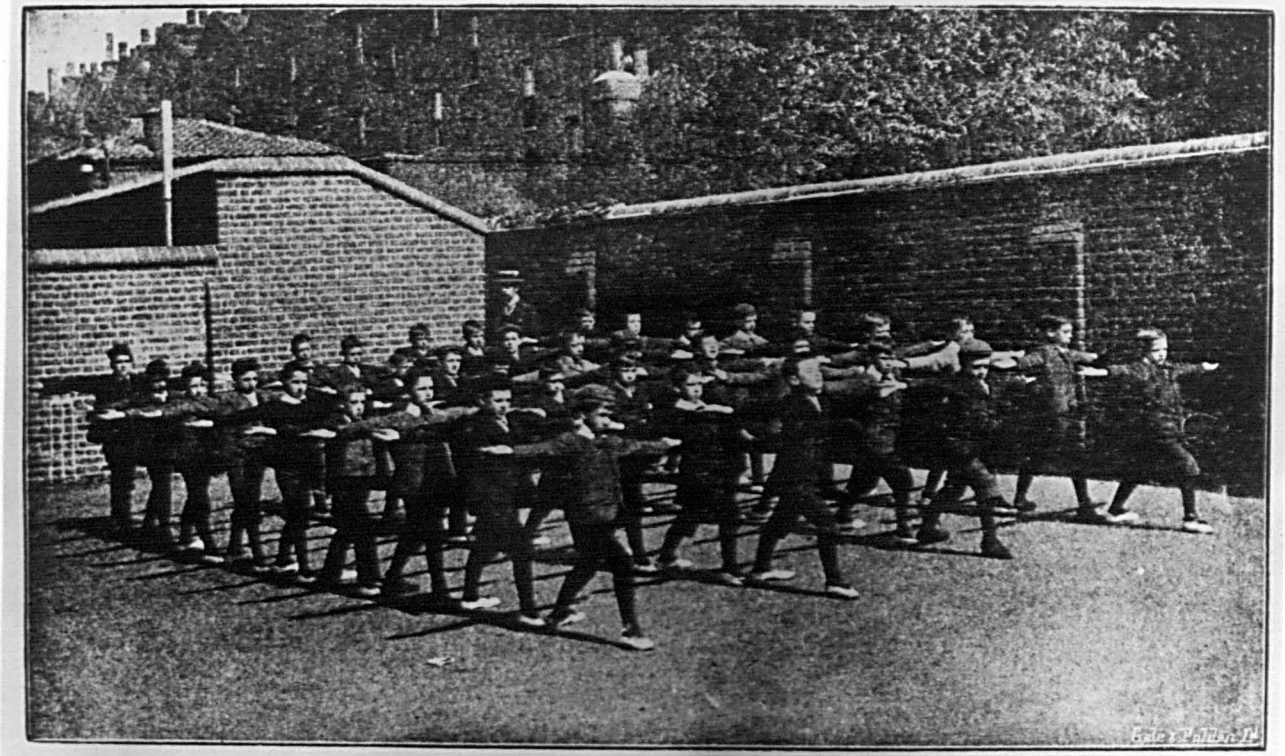


BALANCE MOVEMENTS, FOURTH PRACTICE (WITH ASSISTANCE), "LEFT KNEE—RAISE."

(Ranks opened in First Method, even numbers one pace forwards.)

CÓBOURG ROAD BOARD SCHOOL, LONDON, S.E.

PLATE 28.



SHOULDER MOVEMENTS WITH DIRECT LUNGING, FIRST PRACTICE, "CLASS—LUNGE."

(The exercise has been commenced to the right, and the Class is lunging to the original rear.)

MORELAND STREET BOARD SCHOOL, LONDON, E.C.

FIG. 42.

FIG. 43.

FIG. 44.

FIG. 45.

FIG. 46.

FIG. 47.

FIG. 48.

FIG 49.

FIG. 50.

APPENDIX 3

An assessment of the effects of some of the main Swedish gymnastics exercises.

Arch Flexions

These were used to strengthen the muscles in the upper dorsal part of the spine. It was hoped this would produce a more erect posture and raise the rib-cage to improve breathing. The first series of exercises were taken from a standing position, unsupported by any apparatus, progressing to back lying, hands on the floor, and finally to a variety of starting positions using wall bars. In every case the same set of muscles initiated movement and the effort involved was considerable. Spanning, or span-bending is one of the few ways of exercising this part of the spine, and if taken frequently (3 times each week) and correctly supervised it would eventually have a strengthening effect on the muscles lying parallel to the dorsal spine. Children in the 9-12 age group find difficulty in performing this exercise and it would only be of value if enforced over an extended period of time. The spanning exercises shown in figures 38-41 display the normal tendency to curve the back too low down or to use bent knees. The movement must be concentrated high up in the spine.

Heaving Movements

Stretching the spine and strengthening the muscles of arms and shoulders were the objectives of heaving movements. Posse laid great stress on these exercises:

> "There is no class of exercises more needed by the growing generations than the heaving movements, and in any room (schoolroom) some simple contrivance can easily be put up so that at least some form of these movements may be applied".

All hanging and climbing exercises fell in this category when part or all the weight of the body was taken on the hands (with or

without the support of the legs), and the arms were flexed actively. Posse claimed that similar effects could be achieved by stretching the arms upwards but except in an isometric contraction this is incorrect. He was opposed to raising weights as a form of heaving exercise because he considered that the downward pressure would have a damaging effect on the thorax. This is also inaccurate.

The first movements were taken from fall hanging in which the feet remain in contact with the ground (fig. 105), progressing to various forms of travelling along the beam, suspended by one's arms and clear of the floor (including rotary arm travelling). Finally pull ups were attempted. To give a comparison, none of the fifteen 10-year old girls who regularly attend a gymnastics club taken by the author can perform 4 heaves in fall hanging with straight body; they cannot manage rotary arm travelling where for much of the time the full weight is taken on one arm; and none of them can execute a pull up. A great deal of rope climbing was practised. Ropes were either suspended vertically or attached to the floor at an inclined angle. This is an activity which many children would find frightening. In public gymnasia the ropes were as much as 40 feet in length from floor to ceiling. Climbing in and out of window ladders was intended to involve muscles which were attached transversely across the front and back of the body (fig. 117).

Out of 100 heaving exercises, the first 25 were mainly hanging activities in preparation for arm flexions. There was a great variety of movements on ropes, beams, wall bars and window-ladders which could be graded according to the starting strength of individuals. If taken over a period of years in a graduated course the effects would have been beneficial. Most of these movements involved Swedish apparatus and it would have been difficult to find substitutes in,

for instance, a playground or a central hall.

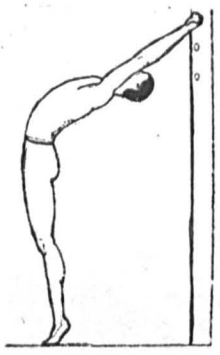
Shoulder-blade movements

Every system of physical exercises included arm movements, forwards sideways and upwards. The objective in Swedish gymnastics was to improve posture and to overcome the tendency of the pectoral muscles to shorten permanently. They required no great skill and would have been within the ability of virtually all but the deformed. Mobility is difficult to measure and as was shown in chapter 8, it is difficult to establish exactly how a joint increases its mobility.

Abdominal exercises

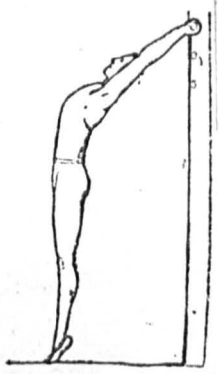
The declared objective of abdominal exercises was to improve digestion. Even the gentler exercises in this section were demanding. The starting position was back lying leg raising. Now if this is done with bent knees it is within the capacity of most people. Performed with straight legs, it is much more strenuous. The advanced movements shown in figures 99, 100, 161 and 162 would be well beyond the ability of most primary children.

In each of the four sections there was variety and a range of work covering fairly easy exercises to extremely powerful movements. The most important point is that the range provided a low base level of fitness and progressed slowly. In that sense Swedish gymnastics could have been valuable in the hands of a sympathetic teacher. The wider question of which type of exercise gives the greatest benefit is considered separately in chapter eight.



Incorrect.
Fig. 40.

By raising the heels the length and the bend of the curve are increased and the effect of the exercise is proportionately greater.



Correct.
Fig. 41.

The position for Span bending is better taken in this way in the first instance so that it may be properly corrected before being taken by word of command.

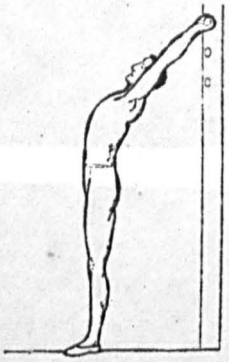


Fig. 38.

Incorrect.
Fig. 39.

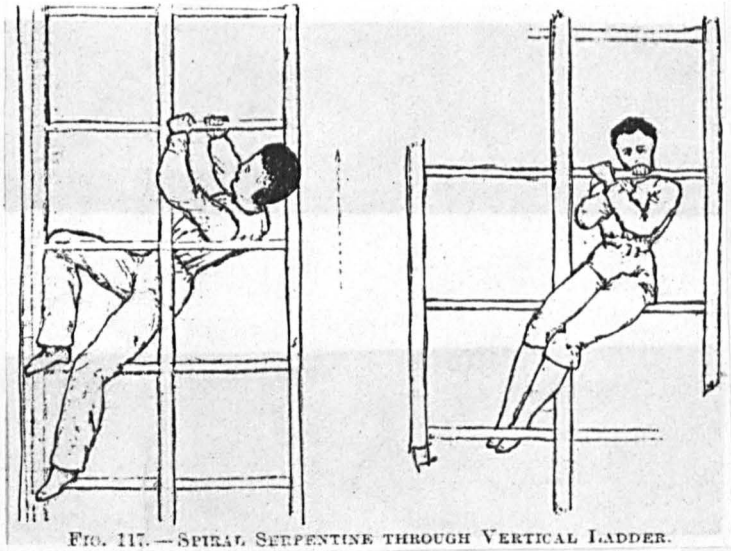


FIG. 117.—SPIRAL SERPENTINE THROUGH VERTICAL LADDER.

FIG. 100.—OVER CR. 2 C
HANG. 2 A. FLEX

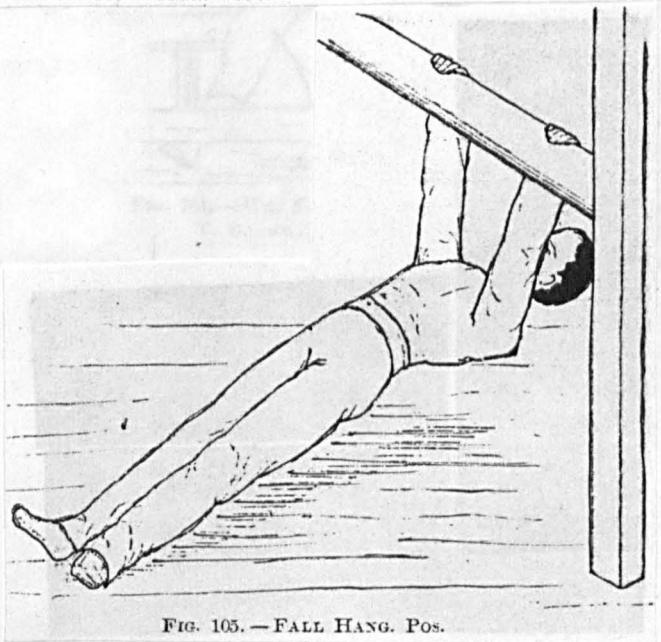


FIG. 105.—FALL HANG. POS.

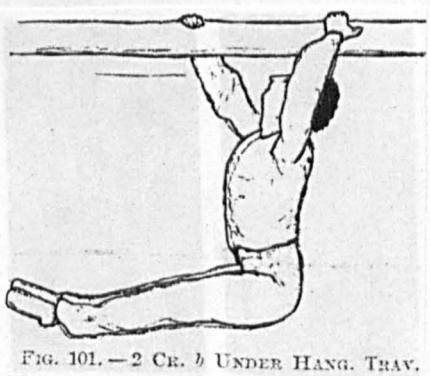


FIG. 101.—2 CR. ♭ UNDER HANG. TRAV.

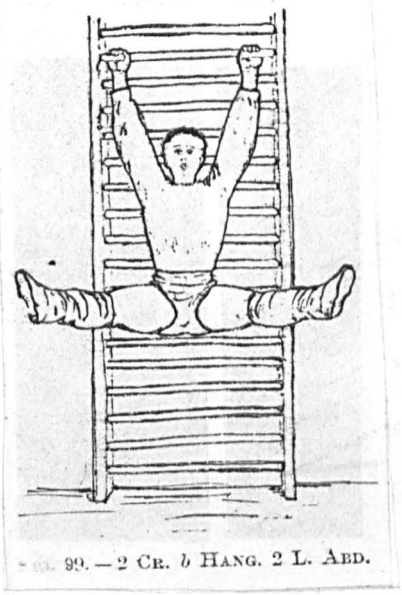


Fig. 99. — 2 Cr. *b* Hang. 2 L. Abd.

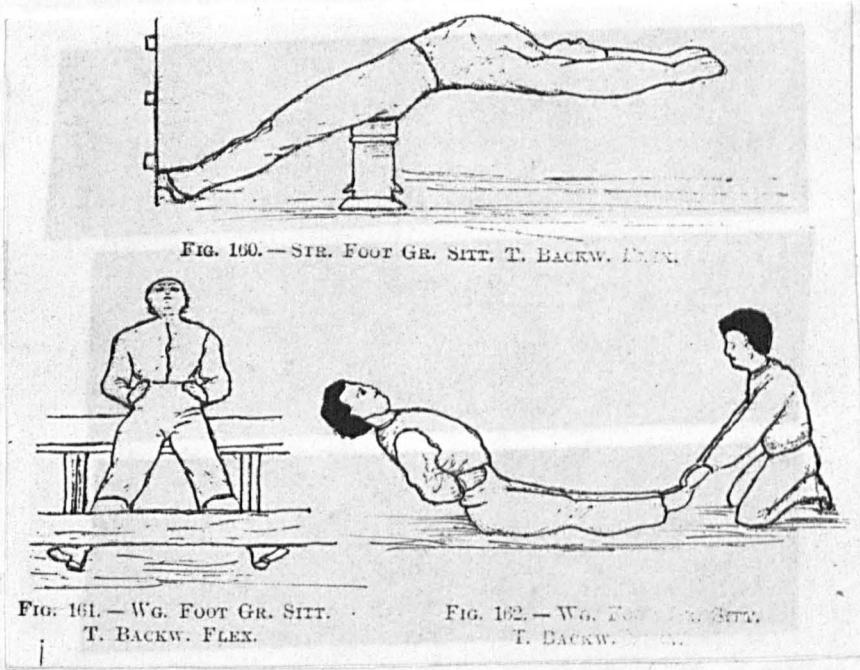


Fig. 160. — Str. Foot Gr. Sitt. T. Backw. Flex.

Fig. 161. — Wg. Foot Gr. Sitt. T. Backw. Flex.

Fig. 162. — Wg. Foot Gr. Sitt. T. Backw. [illegible]

APPENDIX 4

Games in Edinburgh Board Schools

In May 1907 the Edinburgh School Board purchased the Edinburgh Institution playing fields at Warriston for the sum of £4,500. The following month teachers and headmasters known to be interested in school sport were invited to a meeting to discuss various schemes for the development of Warriston. At the meeting an interim Games Committee was formed to supervise the immediate plans for the ground and one of them, David McNally, headmaster at Stockbridge School was asked to draw up a report on the present position of school games and athletics, their place in school, and what could be done in the way of carrying on organised games in the public parks and school playgrounds. It took McNally eight months to produce his report, but when it was circulated to the School Board they were sufficiently impressed to have it printed. The fifty-page report consisted of a review of the place of games in private schools, a brief account of the growth of inter-school competition in the Board schools in Edinburgh, and a comprehensive list of recommendations. McNally was completely convinced of the educational value of games and he quoted inter alia Herbert Spencer, Almond of Loretto, Professor Darroch, and some of Sir Henry Craik's comments during the proceedings of the Royal Commission on Physical Training. But he was also convinced that progress could only come through a planned development of regional playing fields, each serving a number of schools. To highlight the position in Board schools, he described the playing fields at Loretto, Merchiston, Heriot's, the Edinburgh Academy, Royal High School and Watson's. He commented:

"These six Secondary Schools with a total enrolment of under 4,000, have over one hundred acres of playing accommodation. The forty-one Board schools with an enrolment of almost 40,000 have only the school play-yards". For McNally there was no difference in the potential effect of games in private and public schools. He argued that with the right facilities enthusiastic teachers could have an immense effect on Board School children. He pointed out that even without playing fields, many schools were already involving hundreds of children every year, and he simply asked that the Board recognise this activity. McNally made sixteen general recommendations, most of which urged the Board to build or acquire better facilities, and to persuade the S.E.D. that any such expenditure would be both legitimate and profitable. In addition he made forty suggestions about the organisation and administration of various games, and how these could be achieved at regional playing fields throughout the city.

A central part of McNally's argument, which was lost sight of over the years, was that every child should have the opportunity of experiencing a wide range of games. Unfortunately the Board while admiring these sentiments were faced with the immediate problem of gaining the optimum benefit from Warriston. They were already disposed to give priority to existing competitions run as extra-curricular activities, and the composition of the interim Games Committee reflected this concern. McNally's influence was still discernible for another year, but he had been appointed as the city's first Organiser of Continuation Classes in October 1908, a position which fully occupied him in the large-scale developments in further education, and the case for time-tabled recreation was never really put to the test.

Undoubtedly the McNally Report had a powerful effect in Edinburgh. The Interim Games Committee proposed the formation of a standing Games Committee of the School Board, to include Board members as well as teachers and headmasters. The Board rejected this proposal in favour of a two tier committee structure which separated Board members on a Games Committee and teachers on an Advisory Committee. Each of the main sports was represented on the latter Committee which was announced on 4th May 1909. The 22-man Committee included 4 headmasters, 2 infant mistresses, 3 officials of the Board including Captain Cheales the Organiser of Physical Education, and representatives of the following sports - association football, rugby football, swimming, cricket, hockey, golf, tennis, girls' athletic sports, and ball games for girls. McNally was made Clerk to the main Games Committee with membership of all other committees.

By establishing these Committees the School Board gave official recognition to what was essentially extra-curricular activity, much of which now centred upon Warriston. The main advantage from a practical point of view lay in the co-ordination of a fairly heavy programme of fixtures and competitions. But there was also a more creative role for the two Games Committees, namely to formulate policy and to make recommendations to the Board. In May 1910 the Games Committee placed a report before the Board on the question of providing equipment for games both within and outwith the curriculum. They pointed out that the Scottish Code was not specific about the place of games in the curriculum, although they were clearly recognised in the English Schools Code. But Section 24 and 25 of the 1908 Education Act did sanction expenditure on 'playgrounds and recreation fields'. Unfortunately there was no guide as to who should provide apparatus and equipment at these fields. The Games Committee therefore proposed that "subject to the sanction of the Department, approved games within

school hours be organised as part of the curriculum, under Article 24 of the Code, in schools adjacent to Warriston Ground or other schools near which facilities for playing exist, e.g. public parks, and that expenditure for the supply of apparatus to an amount not exceeding £50 per annum be sanctioned therefore". Before submitting this to the School Board, the Clerk to the Games Committee was instructed to contact the S.E.D. on the legal position of the Board in regard to expenditure on apparatus for games outside of school hours, and whether approval would have to be viewed according to the exact nature of the proposals, e.g. the particular games and the number of hours involved. They therefore withheld judgement and asked for further details. The School Board contented themselves with going ahead with the purchase of equipment for Warriston, and did not immediately proceed with proposals for games in the curriculum.

Despite the enthusiasm of teachers and pupils (1500 pupils took part in the third Inter-Scholastics Athletics Championship in 1913), it was not until after the First World War that the Education Authority purchased additional playing fields. These were situated at Slateford (now known as Meggatland) and were available to several schools. All the other fields - Bellevue, Bangholm, Hawkhill and Wardie - were used as central facilities for groups of schools. In addition the Authority laid out fields in sections of the following public parks - King's Park, Leith Links, the Meadows and Saughton Park. It was not until after the Second World War that playing fields were provided as part of the plans of new secondary schools. For forty years after the passing of the 1908 Education Act games were arranged outwith the school time-table.

APPENDIX 5

Copies of Diplomas awarded to James Forbes (1908) and Donald McCuaig (1911).

The Carnegie Dunfermline Trust Gymnasium and College of Hygiene.

DIPLOMA.

This is to Certify that James Forbes

has completed a Course of Training at the Carnegie Gymnasium and College of Hygiene, extending over three Years, and that he is fully qualified to teach the following Subjects :

Educational Gymnastics.
German Gymnastics.
Games – Basket Ball.
Elementary Hygiene.
Elementary Physiology.

The following additional Subjects have been included in his Course of Study :

Anatomy and Theory of Movements.
Psychology and the Principles of Education.
Voice Production. Swimming. Fencing (Foils).

A B Hughes Director of Gymnasium.
John [illegible] Chairman of the Trustees.

Dunfermline, 1st July, 1908.

Dunfermline College of Hygiene & Physical Training

DIPLOMA.

It is hereby Certified that Howard Mc Craig has completed, to the satisfaction of the Scotch Education Department, an approved Course of Instruction at the Dunfermline College of Hygiene and Physical Training, extending over two Sessions, from September 1909 to June 1911; and that the Department will be prepared to accept this Diploma for the purposes of Article 47 of the Regulations for the Preliminary Education, Training, and Certification of Teachers.

The following Marks have been obtained by the said Mr Mc Craig in the Diploma Course.

TECHNICAL TRAINING.

Subject.	Marks.	Subject.	Marks.
Educational Gymnastics	78	General Hygiene, including Medical	
Recreational Gymnastics	71	Gymnastics	76
Anatomy	74	First Aid St Andrews certificate	
Physiology	66	Swimming	70
Experimental Science	69	Games	61

PROFESSIONAL TRAINING.

Mr Mc Craig has undergone a Course of Professional Training in the Principles and History of Education (including Psychology, Logic, and Ethics); General Method of Teaching, Method of Teaching Physical Exercises and School [illegible] and Personal and School Hygiene, under the St Andrews Provincial Committee for the [illegible] hers.

[illegible]
Principal

[illegible]
Chairman of the Curators
Dunfermline Branches

Dunfermline, July 1911.

SCOTCH EDUCATION DEPARTMENT.

TEACHERS OF SPECIAL SUBJECTS.

It is Hereby Certified That

Donald McLuaig

is recognised by the Scotch Education Department, in terms of Article 47 of the Regulations for the Preliminary Education Training and Certification of Teachers, as a QUALIFIED TEACHER of

Physical Exercises and School Gymnastics

from the 1st day of July 1911.

R. Macdonald
Assistant Secretary.

Particulars of Training in respect of which this Certificate has been granted:—

TECHNICAL TRAINING completed in 1911, at Dunfermline College of Hygiene and Physical Training

PROFESSIONAL TRAINING completed in 1911, under the St. Andrews Provincial Committee for the Training of Teachers.

NOTE.—This Certificate is issued subject to the provisions of Article 48(a) of the Regulations.

APPENDIX 6

Dr. W. Leslie MacKenzie's Views on Physical Education

It was shown in chapter 5 that in evidence to the Royal Commission on Physical Training, Dr. W. Leslie MacKenzie expressed reservations about the value of physical education. As a result of his later experiences in conducting a medical examination of 600 school children in Edinburgh on behalf of the Commission, MacKenzie altered his views and became an enthusiastic propagandist for the subject. He was Medical member for the Local Government Board and was therefore in a position to exert a strong influence on the growth of local authority public health services, including the appointment of school medical officers. He and Captain Foster, the first H.M.I. for physical education carried out a large survey of the physical condition of school children in Glasgow (1) and MacKenzie also advised the Dundee Social Union on their medical schedule for examining school children in Dundee (2). He edited the first Annual Reports on the Medical Inspection of school children and was later appointed as a member of the Scottish Board of Health, established in 1919. It is therefore interesting that there were a number of errors or omissions in his analysis of the contribution of physical education to growth and development.

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1. W.L. MacKenzie and A. Foster, The Physical Condition of School Children in Elementary and Higher Grade Schools in the School Board of Glasgow, 1907. This survey of 72,857 children in 69 elementary and 4 higher grade schools was "the most extensive investigation ever undertaken in Britain as to the heights and weights of schools children in primary and higher grade schools". It confirmed the findings of the medical inquiry instituted by the Royal Commission that height and weight was related to the number of rooms in a child's house.

2. Report on Housing and Social Conditions in Dundee, Dundee Social Union, 1905, 101.

First he argued that exercise could increase height and weight (3). He quite correctly quoted various research findings showing that exercise could have quite noticeable effects on weight through the development of muscle, but the growth curve for height is pre-determined at birth and cannot be influenced by exercise. The growth curve can be inhibited by chronic malnutrition (4) and the rate of growth may be temporarily affected by environmental factors such as psychological stress or housing conditions (5). However when these pressures are removed the body will normally experience an accelerated growth rate to bring it back on to its normal pattern. MacKenzie would have been on safer ground in suggesting that exercise could remedy skeletal or postural deformities which resulted in a reduction of expected height. Second he used only cross-sectional data and ignored longitudinal studies. The former provides information about the range of variation in and between age groups, and is a useful tool for making comparisons between populations. The Commission on Physical Training concluded, for example, that there were significant differences in height and weight between social classes, and they were able to compare Scottish children with English and American children of the same age (table 11).

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3. W. Leslie MacKenzie, The Medical Inspection of School Children. (London, 1904), 204.

4. J.B. Tanner, Education and Physical Growth. (London, 1961), 105. "Chronic malnutrition can certainly retard and diminish growth and result in a small-sized adult"

5. ibid, 108-109
Tanner reports on a study in which two groups of German children living in orphanages were given different diets. Although one group received 20 per cent more calories per day, the other group gained more weight over six months. The explanation lay in the behaviour of the person in charge of the first group. Her treatment of the children was extremely strict and humiliating, and constituted a severe psychological stress.

However if it is intended that height and weight will be used as an indicator of ill-health, longitudinal studies are more accurate. Each child is measured once or more annually and if there is a significant reduction in the rate of growth this might be an indication of ill-health. Almond, at Loretto, and Duke, at Rugby School, maintained and used records in this way. The reason why these statistics can be used in this way is that the rate of growth between the age of 5 or 6 and the adolescent spurt is exceedingly regular (6) and any deviation suggests a disorder. One H.M.I., Mr. Smith, reporting on MacKenzie and Foster's work, recognised the need for both cross-sectional and longitudinal studies (7) and it is surprising that MacKenzie did not give more attention to the latter method. McLaren had demonstrated the value of regular measurements of different part of the body to show the effects of exercise (8) and instead of concentrating on height and weight, MacKenzie might have considered undertaking similar studies.

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6. ibid, 63
"In child development circles there has been much argument as to whether development is continuous or whether it occurs in 'stages', that is, in jumps separated by plateaux when little happens..... Physical growth, as we have repeatedly stressed, does not occur in a series of jumps, but continuously ....."

7. R.C.C.E., 1906 BPP, 1906, Vol. 405.
The need for both types of survey was recognised by Mr. Smith, H.M.I. Commenting on the report by MacKenzie and Foster on the physical condition of Glasgow school-children, Smith wrote - "What is wanted here is not to compare one age with another, or one school with another, but to compare each child with the norms and with himself."

8. A. McLaren, Physical Education.
Appendix A consists mainly of photo illustrations of muscular development and under development at different ages. In B, C and D he records the effect of systematic physical training on individual boys and adults; in Appendix E he provides a table of measurements showing increases for each of the men in the first two detachments sent to him in 1861 and 1862.

	British Population Roberts (1)	Boston School Children Bowditch (2)	Aberdeen School Children Hay (3)	Edinburgh School Children MacKenzie (4)	London School Girls, English Mrs. Bryant (5)
Ages	ins.	ins.	ins.	ins.	ins.
B.6-9	45.67	46.15	46.0	44.52	--
G.6-9	44.64	45.89	45.4	44.51	--
B.9-12	51.68	52.10	51.2	50.20	--
G.9-12	50.96	51.72	50.9	49.93	53.66
B.12-15	57.07	58.34	57.3	55.26	--
G.12-15	57.74	58.74	57.4	55.65	60.61
	lbs.	lbs.	lbs.	lbs.	lbs.
B.6-9	49.6	49.68	51.1	46.60	--
G.6-9	47.1	49.25	47.9	45.62	--
B.9-12	66.6	66.32	54.0	59.53	--
G.9-12	61.8	63.95	6i.9	57.76	--
B.12-15	83.7	89.12	84.5	74.02	--
G.12-15	86.7	i0.95	83.3	78.36	--

B = Boys
G = Girls

Table II. Comparative Table of the Height and Weight of British, American, Aberdeen and Edinburgh School Children. R.C.P.T. (1903) Report. 25.

The third weakness in MacKenzie's approach is that he made no reference to body-types, although the study of physique dates back to Hippocrates who classified human physique into two basic types - phthysic habitus, characterised by a long thin body, and apoplectic habitus, distinguished by a short thick body. It was not until after the Second World War that Sheldon and his colleagues put body-typing on a more scientific basic(9) but it is still

9. D.K. Matthews, Measurement in Physical Education. (Philadelphia, 1963), 58. In the last decade of the 19th century American physical educationalists published extensively in this area, e.g. D.A. Sargent, "Intercollegiate Strength Tests". American Physical Education Review, 11, 1897, 108. J.W. Scaver, Anthropometry and Physical Education. New Haven 1896. J.H. Kellog, "The Value of Strength Tests in the Prescription of Exercise." Modern Medicine Library, 11, 1896.

surprising that MacKenzie took no account of body-types in analysing his cross-sectional data. The weakness of this method is that it does not reveal the progress of individuals. If wrongly applied it can suggest that a child whose natural growth pattern will produce a small, light, but healthy adult is abnormal because he falls below the average statistics for his age-group.

Fourth, MacKenzie and Hay used only one measure of functional efficiency of the muscular power of the body in their survey on behalf of the Royal Commission on Physical Training, namely a dynamometer to measure grip strength. Neither he nor Professor Hay commented on the results shown by the test, although they might have recommended that some children should have additional strengthening exercises for their arms. Although the medical schedule was adopted almost intact by the Dundee Social Union for a follow-up study, this item was deleted. They were advised on their methodology by Dr. MacKenzie and presumably he was aware of their actions in omitting this test. There were other tests in existence at the time. Sargent, for example, had worked out a test for use with college students in 1873, consisting of "back and leg strength measured on a dynamometer; right and left grip, measured with a manuometer; lung capacity, recorded by means of a wet spirometer; and arm strength, measured by the number of pull-ups and dips that could be performed by the subject." (10)

Finally, MacKenzie accepted the arguments that strenuous exercise would produce skeletal deformities among children, and that there was a pool of energy in each person which must not be reduced below a certain level. In an important S.E.D. Memorandum signed by MacKenzie and Captain Foster, the following statement appears:

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10. W.H. Sheldon, S.S. Stevens and W.B. Tucker, The Varieties of Human Physique. (New York, 1940).
After years of investigation Sheldon proposed three main male somatotypes - endomorphic (round and soft), mesomorphic (square and hard) and ectomorphic (tall and fragile). He then photographed 4,000 males and produced a scaling technique on each of these three categories in which a subject would be assessed on a 7-point scale for each dimension.

> "the development of the child's muscles may, unless rightly directed, rapidly produce or aggravate deformity. For example, many of the exercises on the trapeze, parallel bars, etc., entail repeated and sustained efforts, which are entirely unsuited for girls and boys, and tend to deform their immature frames and unduly tax their hearts." (11)

This was supported by a quotation from Dr. James Kerr's annual Report to the London School Board for 1906 to the effect that certain kinds of exercise would produce deformity, and that children did not have reserves of strength. In fairness to Dr. MacKenzie, this was a common misconception and the substance of it was repeated by Sir Lauder Brunton in his Presidential address to the 2nd International Congress on School Hygiene held in London from 5-10th August 1907 (12). The biochemical process is now better understood and the accumulation of lactic acid in the muscles is considered to have no harmful effects. The notion that Olympic gymnastics in itself would produce deformities in growing children would be firmly rejected today.

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11. S.R.O., ED 7/3. S.E.D. Memorandum on Systems of Physical Training and Their Relation to the Personal Hygiene of School Life. 17th May 1907, signed by MacKenzie and Captain Foster. "The more recent systems of physical training have not only taken account of growth, but they have made it their cardinal conception".

12. The Times, 6th August, 1907.

> "...there could be little doubt that proper physical training of children during the period of growth was one of the best means of ensuring proper development .... Exercise both of mind and body was good and when carried only to the proper extent, it increased the strength of the child both bodily and mentally,but if carried beyond this point, so as to cause fatigue and exhaustion it had the opposite effect and produced diminished power both of body and brain."

In view of these various misconceptions it is easy to appreciate why MacKenzie should have insisted that physical education must be supervised by doctors, and his support for a scientific approach to gymnastics is understandable. It is not so clear why he should have come round to the view that physical education was an essential subject in schools. He appears to have based his judgements on ideas which were occasionally restricted, in terms of knowledge available at the time, and which by to-day's standards were fundamentally unsound.

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ED 14/17	Education (Scotland) Bill 1904	Press Cuttings.
ED 14/18	Education (Scotland) Bill 1904	Press Cuttings.
ED 14/23	Education (Scotland) Bill 1904	Feeding of School Children.
ED 14/24	Education (Scotland) Bill 1904	Papers relating to medical inspection, etc.
ED 14/25	Education (Scotland) Bill 1904	Letters received before the introduction of the Bill.
ED 14/26 to ED 14/33	Education (Scotland) Bill 1904	Letters and representations Nos. 1-441 March 1904 - January 1905.
ED 14/34	Education (Scotland) Bill 1904	Proceedings in Parliament.
ED 14/35	Education (Scotland) Bill 1905	Set of various prints of bill with annotations, drafts, etc. Copy of debate.
ED 14/36	Education (Scotland) Bill 1905	Confidential memorandum circulated to Cabinet 20th February 1905.

ED 14/39	Education (Scotland) Bill 1905	Letters and representations Nos. 442-456, October-May.
ED 14/40	Education (Scotland) Bill 1905	Letters and representations Nos. 457-490, March-May.
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ED 14/42	Education (Scotland) Bill 1905	Press cuttings from introduction of Bill to 8.3.1905.
ED 14/43	Education (Scotland) Bill 1905	Press cuttings from 9.5.1905 (date of 2nd reading) to 25.2.1907.
ED 14/44	Education (Scotland) Bill 1906	Drafting papers and prints of Bill.
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