

The syllabus of physical exercises for public elementary schools, 1909.

Contributors

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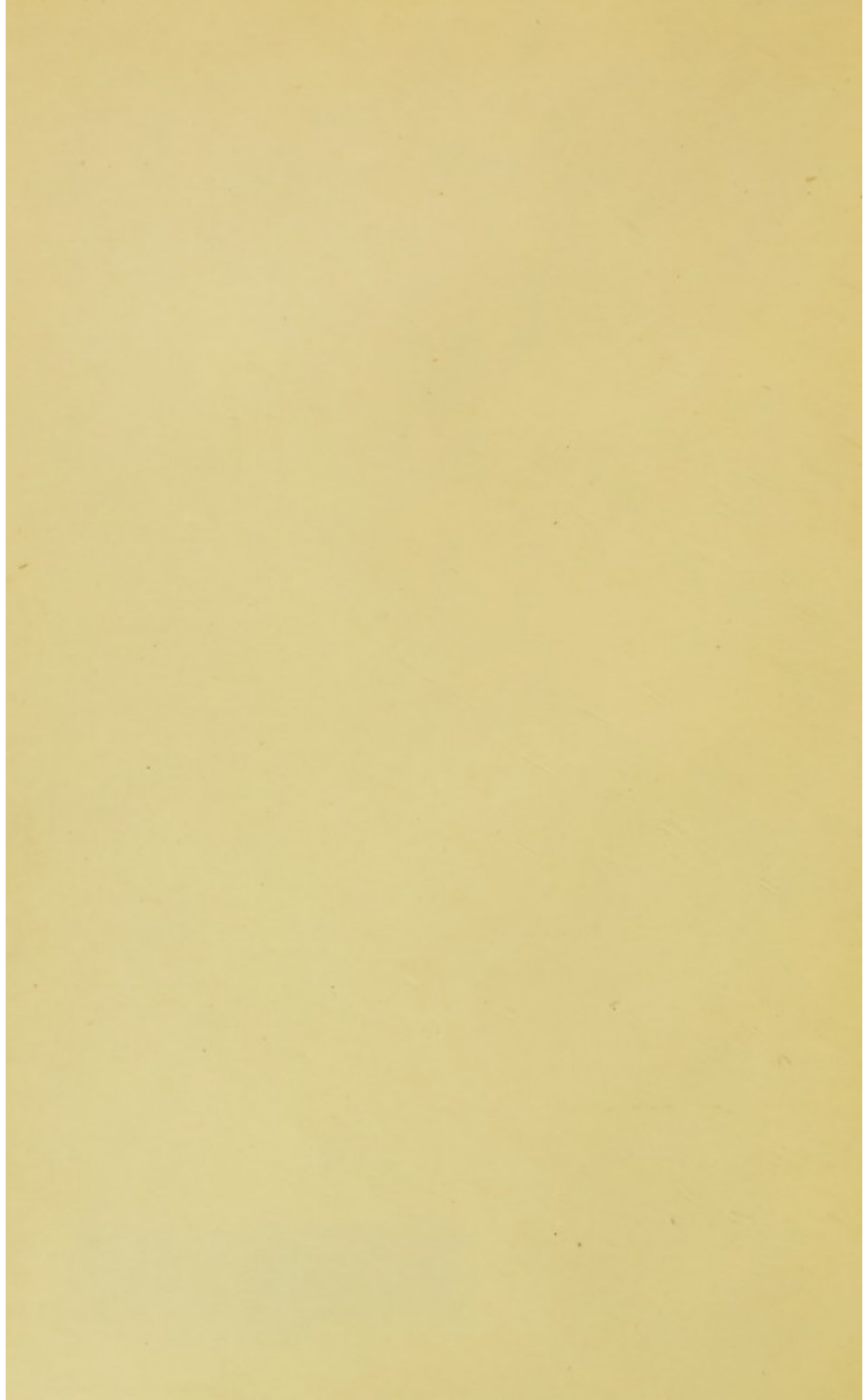
BOARD OF EDUCATION.

THE
SYLLABUS
OF
PHYSICAL EXERCISES
FOR
PUBLIC ELEMENTARY SCHOOLS
1909



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BOARD OF EDUCATION

THE
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SECOND EDITION.

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PUBLIC ELEMENTARY SCHOOLS
1909



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*NOTE.—This edition is identical with the previous issue  
except for the correction of misprints and  
of a few verbal errors.*

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PREFATORY MEMORANDUM.

1. In issuing a new and revised edition of their Syllabus of Physical Exercises, the Board of Education wish to emphasise their sense of the great importance of this branch of public education. The Board have already, in their "Suggestions for the Consideration of Teachers," published in 1905, drawn attention to the effect of Physical Exercises and to the close connection which exists between it and the rest of the process of education.

2. The past three years have been marked by the statutory recognition of the interest of the State in securing the physical well-being of the children in Public Elementary Schools. The Education (Provision of Meals) Act, 1906, seeks to ensure as far as possible that no child shall be prevented by want of food from profiting by the education given in those schools. Section 13 of the Education (Administrative Provisions) Act, 1907, empowers Local Education Authorities to provide for children attending Public Elementary Schools play centres and other means of recreation, requires them to provide for the medical inspection of the children, and authorises them to make such arrangements as may be sanctioned by the Board for attention to the children's health and general physical condition. These enactments were not intended merely to provide for the relief of immediate distress. By entrusting to Education Authorities the performance and exercise of the duties and powers referred to, Parliament declared its conviction that the true aim of education is something more than the mere training of the intelligence, and that attention to the health of the children is a matter which directly concerns those whose duty it is to provide for their education. It is now generally recognised that the physical health of the children lies at the root of education properly conceived. The object of every system of education worthy of that name will be the concurrent development of a sound character, an active intelligence, and a healthy physique. These qualities are to a great degree mutually dependent. It is undeniable that healthy physical conditions assist the development of the moral and mental faculties, and that adverse physical conditions may

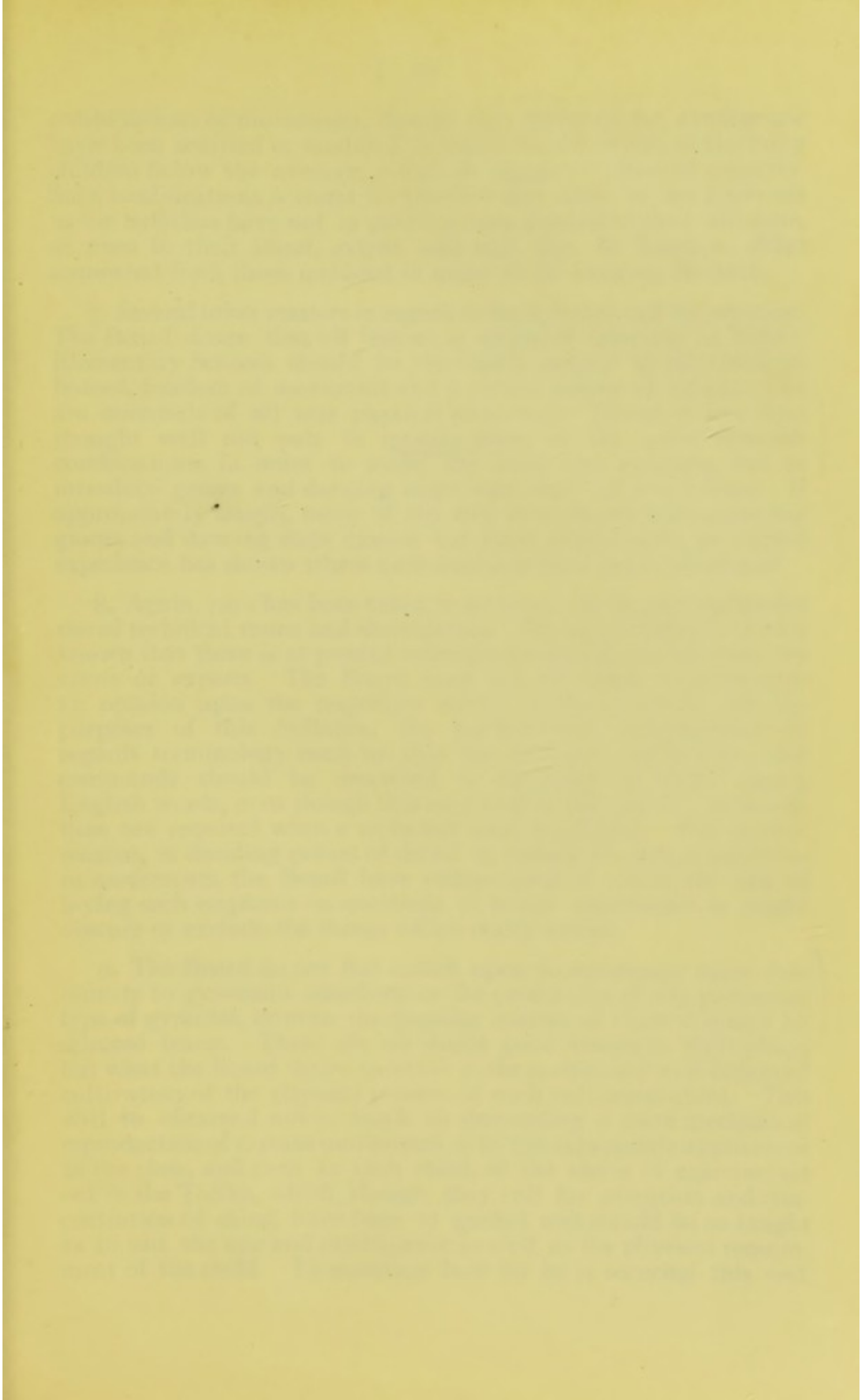
vitiates the otherwise well-directed efforts of the teacher. Physical education is thus essential to a sound intellectual training, and may be said to be fundamental in its effects on the individual.

3. Proper nourishment, effective medical inspection, and hygienic surroundings will not, however, of themselves produce a sound physique. A further requirement is Physical Exercise. This may, no doubt, be promoted, especially in the case of country children, by a variety of means, but none of these is such that special Physical Exercises should be entirely dispensed with, and, in the case of children whose lives are spent in towns, these Exercises are indispensable both for the development of the body and for the correction of the defects or evil habits induced by an unhealthy physical environment. In the case of all school children, therefore, Physical Exercises should be employed, but their use should always be carefully adapted to the needs and capacities of the children; there should, in short, be a direct relation between the three factors of nutrition, general health, and physical training.

4. Having in view the results to be secured, the Board have for several years been giving their earnest attention to this subject. They have been deeply impressed both with the importance of the subject and with the serious inadequacy of the existing facilities for its proper treatment. Some progress has, indeed, been made, but much remains to be done, and the Board desire now to see more decided and general progress, guided not only by the issue of an official Syllabus and appropriate inspection, but by a more adequate equipment of the teaching staff in both the Training Colleges and the Public Elementary Schools.

5. The Board's Official Syllabus was first issued in the year 1904 in consequence of the Report of an Interdepartmental Committee appointed by the Board jointly with the Scotch Education Department. It was reprinted with slight alterations in 1905, and is now re-issued with further amendments and extensive revisions, which are based upon experience and have received the careful consideration of those qualified to speak with authority on the subject. Speaking generally the new Syllabus, like its predecessor, is based on the Swedish system of educational gymnastics which has been adopted in several European countries, and is now the basis of physical training in the Army and Navy in this country.

6. The Exercises in this Syllabus have been selected, and arranged in appropriate progression, with a view to the promotion of the harmonious development of all parts of the body. They have been chosen as suitable for children of school age, and may be effectively carried out without the use of special apparatus. Exercises likely to prove injurious to children of weak physique have been excluded, and some of the ordinary Swedish Exercises, or



The first part of the report deals with the general situation of the country and the progress of the work during the year. It is followed by a detailed account of the various projects and the results achieved. The report concludes with a summary of the work done and the plans for the future.

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combinations of movements, though well designed for average use have been omitted or modified in order to avoid risk of straining children below the average, either in vigour or physical capacity. Such modifications account for the fact that some of the Exercises in the Syllabus have not in practice been pressed to their ultimate, or even to their usual, extent, and will thus be found to differ somewhat from those included in many of the existing Manuals.

7. Several other matters in regard to the Syllabus call for mention. The Board desire that all lessons in physical exercises in Public Elementary Schools should be *thoroughly enjoyed* by the children. Indeed, freedom of movement and a certain degree of exhilaration are essentials of all true physical education. Hence, it has been thought well not only to modify some of the usual Swedish combinations in order to make the work less exacting, but to introduce games and dancing steps into many of the lessons. If appropriately taught, many of the free movements accompanying games and dancing steps cannot but have good results, as indeed experience has shown where such exercises have been introduced.

8. Again, care has been taken to avoid as far as practicable the use of technical terms and descriptions. On this subject it is well known that there is at present considerable divergence between the views of experts. The Board must not be taken to pronounce an opinion upon the respective merits of these views. For the purposes of this Syllabus, the predominant consideration as regards terminology must be that the exercises, movements, and commands should be described or expressed in quite simple English words, even though this may lead to the use of more words than are required when a technical term is adopted. For similar reasons, in deciding points of detail in regard to certain positions or movements, the Board have endeavoured to avoid the risk of laying such emphasis on questions of minor importance as might obscure or exclude the things which really matter.

9. The Board do not feel called upon to encourage mere conformity to gymnastic standards or the production of any particular type of gymnast, or even the popular custom of class displays by selected teams. These are no doubt good things in their place, but what the Board desire to secure is the careful and well-balanced cultivation of the physical powers of each individual child. This will be obtained not so much by demanding a mere mechanical reproduction of certain movements as by the appropriate application to the class, and even to each child, of the series of exercises set out in the Tables, which, though they call for attention and concentration of mind, have been so graded and should be so taught as to suit the age and intelligence as well as the physical requirement of the child. To ascertain how far he is securing this end,

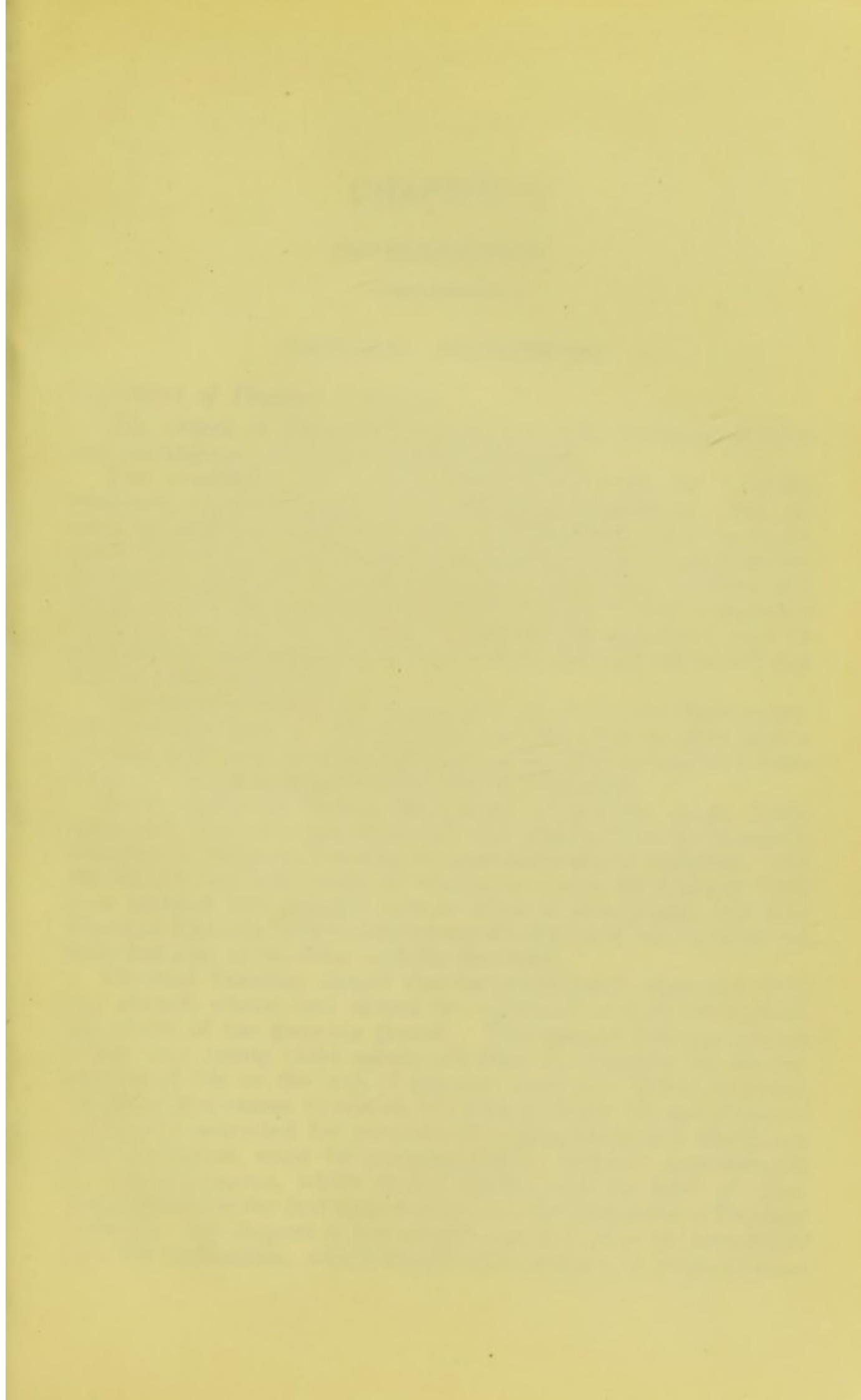
the efficient teacher, whilst teaching the Tables with discipline and precision, will watch in particular the effects of the exercises upon his pupils, submitting a child when necessary to medical examination by the school Medical Officer.

10. The Board consider it of the utmost importance that the teacher should be encouraged to consider the principles embodied in the Syllabus and to apply them to the teaching of the children under his care. With this object in view, some general guidance has been provided in the chapters and appendices of the Syllabus as to the Theory and Practice of the subject. These have been dealt with as briefly and simply as possible, chiefly to meet the needs of those numerous teachers who have not had the advantage of special training in this subject.

11. In conclusion, the Board wish to impress upon Local Education Authorities that the development of the physique of the children under their care is a matter of national importance. They do not pretend that the mere adoption of the Official Syllabus will prove an effective remedy for all the physical defects which at present afflict so many of these children, but they are convinced that the principles on which the Syllabus is based are sound, and that its general adoption and right interpretation and teaching will be fruitful in practical benefits. They therefore appeal confidently to Education Authorities to assist them loyally in the establishment of a system which will, as they believe, contribute materially towards the success of the efforts now being made to promote the moral, mental, and physical development of the children in Public Elementary Schools, and to ensure that every such child shall receive, as far as possible, a training which shall fit him or her to perform the duties of life with vigour and success.

Robert S. Morant

JULY 1909.



The following is a list of the names of the children who have been adopted by the State of New York since the year 1900. The names are arranged in alphabetical order of the surnames.

The names of the children are as follows: [The text is extremely faint and illegible, but appears to be a list of names.]

The names of the children are as follows: [The text is extremely faint and illegible, but appears to be a list of names.]

Robert L. [Name]

CHAPTER I.

INTRODUCTION.

GENERAL PRINCIPLES.

The Object of Physical Training.

The object of Physical Training is to help in the production and maintenance of health in body and mind.

The conditions of modern civilisation with its crowded localities, confined spaces, and sedentary occupations; the increasing need for study and mental application; and the many social circumstances and difficulties which restrict opportunities for natural physical development, all require that children and young people should receive physical training by well-considered methods, not for the purpose of producing gymnasts, but to promote and encourage, by means of such training, the health and development of the body.

The purpose of Physical Training is not to fit the child to perform certain more or less difficult exercises, but to give him a stronger and more healthy body and to aid him to approach more nearly to the ideal of perfect physical development.

It is especially during the period of growth, when body, mind and character are immature and plastic, that the beneficial influence of Physical Training is most marked and enduring; and the highest and best results of education cannot be attained until it is realised that mental culture alone is insufficient, and that Physical Exercise is necessary to the development not only of the body but also of the brain and the character.

Physical Training should thus be commenced when the child first attends school, and should be continued at least throughout the whole of the growing period. The natural free movements of the very young child supply all that is required at the beginning of life in the way of physical exercise. When, however, the child first comes to school, his natural desire for movement is necessarily restricted for purposes of organisation and discipline. This restriction must be compensated by frequent opportunities for free movement, which should chiefly take the form of play. This constitutes the first step in what may be considered as Physical Training. By degrees a few simple exercises may be introduced into the curriculum, which should still contain a large element

of play, but play directed by the teacher. The exercises should then be gradually increased until they take the form of regular lessons on the lines indicated hereafter. It is of the greatest importance that the recreative element should never be omitted if the best results are to be gained. Enjoyment is one of the most necessary factors in nearly everything which concerns the welfare of the body, and if exercise is distasteful and wearisome its physical as well as its mental value is greatly diminished.

Effects of Physical Training.

Physical Training has, or should have, a twofold effect ; on the one hand a physical effect and on the other a mental and moral effect, which for convenience may be termed educational in the popular sense. The direct results upon the health and physique of the child may be described as the *physical effect*. The teacher must clearly recognise that the child is a growing organism whose powers for physical work vary definitely and widely at different ages, and that a scheme of exercises designed for men undergoing training is not suitable for young boys and girls. To meet the special circumstances of continuous growth and development, a course of graduated exercises has been framed to suit children of all ages and both sexes, which aims at training every part of the body harmoniously. Not only can it be adapted to children of various ages, but under medical supervision it can be used to counteract and remedy various physical defects of weakly children.

Exercises, if rightly conducted, also have the effect, not less important, of developing in the children a cheerful and joyous spirit, together with the qualities of alertness, decision, concentration, and perfect control of brain over body. This is, in short, a discipline, and may be termed the *educational effect*.

These two elements are obviously blended in varying degree in every suitable exercise and, according to circumstances, now the one aspect of the exercise, now the other, is to be regarded as the more important. The difference consists rather in the stage at which, and the manner in which, the exercise is taken than in actual difference of movement.

PHYSICAL AND EDUCATIONAL EFFECT.

Exercise of the body may therefore be considered, according to its effect, physical or educational.

I. *The Physical Effect*—

- (a) On the General Nutrition.
- (b) Corrective.
- (c) Developmental.

These are interdependent parts of one combined effect.

The [illegible] [illegible]

The [illegible] of [illegible] and the [illegible] of [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

The first part of the paper is devoted to a general survey of the history of the subject. It is shown that the study of the history of the subject has been a continuous process since the time of the ancient Greeks. The history of the subject is divided into three periods: the classical period, the medieval period, and the modern period. The classical period is characterized by the work of the ancient Greek philosophers, the medieval period by the work of the medieval scholars, and the modern period by the work of the modern philosophers.

History of the Subject

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GENERAL AND HISTORICAL SURVEY

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II. *The Educational Effect*—

On the formation of the character and the development of the higher mental and moral qualities.

I.—PHYSICAL EFFECT.

(a) *Effect on the General Nutrition.*

Exercises having a beneficial influence on the general physique produce a nutritive effect, that is, they contribute to the better nutrition of the body. Such exercises consist chiefly of massive movements, which are of two kinds: general and special.

General Massive Movements are those of the limbs and trunk which involve the whole bony and muscular structure of the body, and quickly and powerfully affect both respiration and the circulation. Types of such exercises are to be found in the natural play movements of children such as running, leaping, and skipping, also in marching, dancing, cycling, and games of all kinds. It is chiefly through such movements, given a sufficient supply of suitable food and fresh air, that the structure of the body is built up during the growing period, and the artificial conditions of school life make it of the first importance that adequate provision should be made for such exercises. Wherever opportunity offers, children should be encouraged and, if necessary, taught to take part in all manner of games in which a considerable number can engage at the same time. The value of organised games as an adjunct to physical training is very great, though they should not take the place of the regular lessons in physical exercises.

Among the *Special Massive Movements* may be included the various balance movements, shoulder exercises, and lunges. These have a beneficial effect upon the nervous system and strengthen the control exercised by the nerve centres over the muscles.

(b) *The Corrective Effect.*

The term "corrective effect" is used here to denote the remedy or adjustment of any obviously defective or incorrect attitude or action of the body, or any of its parts. Exercises employed for their corrective effect do not usually involve the whole body, but the trunk or limbs taken separately, in order to encourage local development. Special movements of the head, back, and arms, come under this heading, and we may also include respiratory exercises. "Remedial" exercises also fall into this group, but are not, as such, within the scope of the present Syllabus.

Breathing Exercises are used in particular to stimulate the activity of the lungs and circulation, and thus increase the supply of oxygen to the body. Unless the lungs are from time to time

expanded to their maximum capacity, they cannot attain their full development, and it is equally necessary that the chest walls and the muscles controlling them should be properly exercised. The object of such exercise is thus to promote the healthy activity of the lungs, as well as to increase the mobility of the chest. In this connection it is important to note in estimating the effect of chest exercise, that the most important measurement is not that of the chest when distended to its maximum capacity, but the difference in measurement between the full and empty chest. Respiratory movements have also a mental effect in quieting and controlling a class, particularly after a vigorous exercise, but they should not be attempted while the children are actually "out of breath," or in a badly ventilated atmosphere.

These exercises are also valuable in the correction of "mouth breathing." In a large number of cases this is originally due to a faulty habit of breathing, and not to any obstruction or hindrance to the free passage of air through the nose. In such instances the habit can nearly always be eradicated, with great advantage to the health of the child, if breathing exercises, with the mouth closed, are efficiently practised.

Corrective exercises proper are designed to counteract the malpositions so often assumed by children in school, and also to correct certain bodily defects, many of which, unless care is taken, are apt to be intensified by the artificial conditions of school life. For instance, *Trunk forward and backward bending*, and the lateral Trunk movements are most useful in assisting chest development and in strengthening the back and neck muscles in children who have round shoulders and flat, ill-shaped chests, while *shoulder blade* movements are also useful for the same purpose. Such children have often great difficulty in doing these exercises well. Again, *Heel raising* corrects the tendency to flat foot. A teacher is often able to effect marked improvement in children who habitually assume malpositions by means of some of these exercises.

(c) *The Developmental Effect.*

One of the aims of Physical Training is to promote the development of the muscular system and the body as a whole, in order to attain the highest possible degree of all-round physical fitness. Physical Training has also an equally important influence on the development and specialisation of the brain cells.

There are in the brain certain "centres" or masses of brain matter which preside over co-ordinated movements of all kinds. These centres begin to perform their functions in early life, when the child learns to stand, to walk or to talk. As new movements are attempted new centres become active, certain nerve impulses become more or less habitual, and thus new nerve

The first part of the paper discusses the general principles of the theory of the atom, and the second part discusses the application of these principles to the specific case of the hydrogen atom. The theory of the atom is based on the assumption that the electron moves in a circular orbit around the nucleus, and that the angular momentum of the electron is quantized. This leads to the prediction that the energy levels of the atom are discrete, and that the spectrum of the atom consists of a series of discrete lines. The application of these principles to the hydrogen atom leads to the prediction that the spectrum of the hydrogen atom consists of a series of discrete lines, which are observed in nature.

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The Hydrogen Spectrum

The spectrum of the hydrogen atom is one of the most important examples of a discrete spectrum. It consists of a series of discrete lines, which are observed in nature. The theory of the atom predicts that the spectrum of the hydrogen atom consists of a series of discrete lines, which are observed in nature. The application of these principles to the hydrogen atom leads to the prediction that the spectrum of the hydrogen atom consists of a series of discrete lines, which are observed in nature.

paths are opened up and established, and the connections between the centres in different parts of the brain become increasingly well defined and co-related. It has been found that within reasonable limits the greater the scope of the physical education, the more complex and highly specialised and developed do these centres become.

Massive movements, involving large groups of muscles, are acquired earliest; the finer movements—for instance, those involving the small muscles of the hand, the balance exercises, and the more difficult combined exercises—come later, and a premature attempt to develop these more difficult movements results in unnecessary fatigue of the nerve cells. Accuracy and precision of movement are not to be expected from young children, because their brain centres are not sufficiently developed. As the centres are gradually educated, so the exercises become more precise and exact.

There should, therefore, be no demand for accurate movements in the infant school and but little in the lower standards. It is only in the upper school, with children from 11-14 years of age, that real precision and smartness of execution should be required.

II.—EDUCATIONAL EFFECT.

The Educational effect is common in greater or less degree to all physical exercises, which have a strong mental and moral influence in addition to their direct effect upon the brain and body, and must be recognised as a powerful factor in the formation and development of character. The child unconsciously acquires habits of discipline and order, and learns to respond cheerfully and promptly to the word of command. For the correct performance of the exercises it is essential that the response shall be ready, as this encourages activity and alertness together with accuracy and precision.

Again, in the process of learning a variety of new movements and exercises the memory is strengthened. As the exercises become more advanced there is an increasing demand on the powers of concentration and initiative, and also of endurance and determination. The constant call for self-control and self-restraint, for co-operation and harmonious working with others, needed for performing physical exercises and for playing organised games, helps to foster unselfishness and promotes a public spirit which is valuable in after life.

Rightly taught, Physical Exercises should serve as a healthy outlet for the emotions, while the natural power of expressing thought, feelings and ideas by means of bodily movements is encouraged and brought out—a power which was in ancient

times carefully and even religiously cultivated, but which now tends to disappear under modern conditions. This appeal to the æsthetic sense is very great, and extremely important, for in learning to appreciate physical beauty in form and motion, the perception of all beautiful things is insensibly developed and the child gradually learns to seek beauty and proportion not only in his external surroundings, but also in the lives and character of those he meets.

While this educational effect is not wanting in such simple natural movements as walking, running, or breathing, when performed with intention, it belongs in a higher degree to other and more difficult exercises in the Syllabus. At first, each of these exercises requires for its performance a certain concentration of mind and a certain effort of will, and it is only by repeated, and at first laborious, efforts that perfection of execution is attained. Some degree of fatigue always accompanies the earlier performances, and the more immature the structures put into action the more sensitive they are, and the earlier do they show fatigue. In this connection it should not be forgotten that those exercises which involve the two sides of the body symmetrically are easier to learn, and entail less mental fatigue than asymmetrical movements. An exercise, for example, in which the right arm and left leg move together requires much more thought and concentration than one in which the two arms or legs are making equal and similar movements. At the same time the effect of each performance is stored up as a permanent memory, the repetition becomes by degrees less fatiguing, and as a result of lessons repeated week by week the exercise is eventually performed automatically. At this stage its educational value to some extent ceases, but its nutritive value and physical effect remain and are even increased. It follows that in a school course, one and the same exercise may be used for two quite different purposes: (1) During the process of learning, for its educational effect; (2) when it has been mastered, for its physical effect. Though, as has been pointed out, no hard and fast distinction can be drawn in practice between these effects, the matter is of importance when it is necessary to determine into which group an exercise shall fall in arranging a Table of exercises.

THE APPLICATION OF PHYSIOLOGY TO PHYSICAL EXERCISES.

An important physiological effect of physical exercise is to promote the functional activity of the various parts of the body, either directly or indirectly. Increased activity will, within limits, produce increased efficiency. It is necessary to a right understanding of this matter, which lies at the foundation of the science

of physical sciences that a good understanding should have of
power for the purposes of physics, which are understood, and
a management which will give the application of the
knowledge of the world of the world.

The Body Paragraph

The first part of the body paragraph is the topic sentence, which
states the main point of the paragraph. This is followed by the
evidence, which is the information that supports the topic sentence.
The evidence is usually in the form of a quote or a statistic.
The final part of the body paragraph is the analysis, which
explains how the evidence supports the topic sentence.

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The third part of the body paragraph is the topic sentence, which
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The final part of the body paragraph is the analysis, which
explains how the evidence supports the topic sentence.

The fourth part of the body paragraph is the topic sentence, which
states the main point of the paragraph. This is followed by the
evidence, which is the information that supports the topic sentence.
The evidence is usually in the form of a quote or a statistic.
The final part of the body paragraph is the analysis, which
explains how the evidence supports the topic sentence.

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explains how the evidence supports the topic sentence.

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states the main point of the paragraph. This is followed by the
evidence, which is the information that supports the topic sentence.
The evidence is usually in the form of a quote or a statistic.
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explains how the evidence supports the topic sentence.

The first part of the paper discusses the importance of the study and the objectives of the research. It also mentions the scope of the study and the limitations. The second part of the paper discusses the methodology used in the study. It includes the data collection methods, the sample size, and the statistical methods used for data analysis. The third part of the paper discusses the results of the study. It includes the findings of the study and the conclusions drawn from the results. The fourth part of the paper discusses the implications of the study and the recommendations for future research.

The study was conducted in a systematic and rigorous manner. The data was collected from a representative sample of the population. The statistical methods used were appropriate for the data and the research objectives. The results of the study are presented in a clear and concise manner. The conclusions drawn from the results are based on the findings of the study. The implications of the study are discussed in detail. The recommendations for future research are based on the findings of the study and the limitations of the study.

THE APPLICATION OF PSYCHOLOGY TO BUSINESS

The application of psychology to business is a rapidly growing field. It involves the use of psychological principles and techniques to improve business performance. This includes the study of consumer behavior, organizational behavior, and human resources management. The application of psychology to business can help to improve the efficiency and effectiveness of business operations. It can also help to improve the well-being of employees and the satisfaction of customers.

of physical exercises, that a brief consideration should here be given to the elements of physiology which are chiefly concerned. A subsequent section will deal with the application of this knowledge to the work of the Syllabus.

Preliminary Note on Physiology.

The Body Framework.

The framework of the human body is made up of a number of bones of various shapes and sizes. Wherever two or more bones meet one another we find a "joint." These joints may be "fixed," such as those between the bones of the skull; or "moveable," such as the elbow or hip joint, and these moveable joints are the important ones from the point of view of physical exercise.

Muscles.

The bones and joints are clothed with muscles. A muscle usually arises chiefly from one bone; it then passes over a joint, and is attached or inserted into another bone by means of a tough, fibrous extension which is called a "tendon." Each muscle is made up of a large number of muscle-fibres, arranged in separate bundles, which in their turn are bound together to make up the entire muscle. Each muscle-fibre possesses the property of contraction and thus may become shorter and thicker. When contraction occurs the muscle as a whole also becomes shorter and thicker. The tendon, which does *not* contract, is then pulled upon, movement takes place at the joint on which the muscle acts, the bone to which the tendon is fixed moves, and the limb is bent or straightened as the case may be. Such muscles are known as "voluntary" muscles because they can be made to contract at will. There are also muscles over which the will has no control, and which are, therefore, called "involuntary" muscles. Such, for example, are the muscles of the heart, the stomach, and the intestines. When a muscle contracts, and so does work, certain changes occur: for example, some substance in the muscle is used up to supply the energy necessary for performing this work; and there remain also in the muscle as a result of the work certain waste materials, which, if they are allowed to accumulate, exert a harmful and poisonous effect.

The Circulation.

Among the muscles and muscle-fibres, and in nearly all other parts of the body, we find a network of blood and lymph vessels. The blood-vessels start from and return to the heart, which is placed in the chest, between the two lungs, and which acts as a force pump to drive the blood along the vessels throughout the body. The blood as it is received from the lungs and as it leaves the heart is "pure," and contains nourishment for the body. As it passes along the blood-vessels it gives up to the muscles and other tissues of the body the oxygen and the other nourishing substances that it contains, while at the same time it receives from the tissues on its way back to the heart the carbonic acid gas and various waste products that have resulted from the work done by the body. The blood, therefore, when it returns to the heart from the system is "impure" and must be purified before it is fit to be distributed to the tissues once more. This purification takes place to a large extent in the lungs.

Respiration.

The lungs consist of innumerable tiny bags, or sacs, the extremely thin walls of which are covered with a network of the smallest blood-vessels. It is these air-sacs, or air-vesicles, which during respiration become filled with air. Each act of respiration consists of three parts: inspiration, expiration, and then a short pause. In quiet *inspiration*, the muscles between the ribs contract and pull the ribs upwards and outwards, so that the chest as a whole becomes shorter and wider than it was before. At the same time, the diaphragm, a large, thin, dome-shaped muscle which forms the floor of the chest and at the same time

separates it from the abdomen, also contracts and becomes flatter and less curved. The floor is thus lowered while the sides of the chest are raised and widened, and as a result of this the capacity of the chest is increased and there is more room in it for additional air. As the diaphragm contracts and becomes flatter, however, it enlarges the chest at the expense of the other portion of the body cavity—the abdomen. Some pressure is therefore necessarily caused on the organs contained in the abdomen, and to relieve this the muscles of the body wall relax somewhat. The air that is breathed in is in this way able to pass quite easily downward into the lungs, which at once expand. In ordinary quiet *expiration* the muscles of the ribs and diaphragm simply relax and the chest resumes its original shape, the abdominal muscles simultaneously acting. The air is expelled partly by muscular action and partly by the general elasticity of the lungs. In forced or hurried breathing other muscles are brought into action, such as those of the upper part of the chest, neck and shoulder (for inspiration) and of the abdominal wall (for expiration).

It will thus be seen that three groups of muscles are mainly concerned with respiration :

- (1) the muscles of the chest wall (or thorax) ;
- (2) the diaphragm ;
- (3) the muscles of the abdominal wall.

Breathing is, therefore, spoken of as “thoracic” or “abdominal,” according to which group of muscles is chiefly involved, the diaphragm being always used in any form of respiration.

The normal, well-developed boy uses the chest and abdomen fairly equally, and men also breathe in a similar way. As a little girl, however, grows up there is a tendency for her to use the abdominal muscles less and less in breathing, and her respiration therefore gradually becomes chiefly, and in some cases almost entirely, thoracic in type. This may be due to physiological changes, but it may also be caused in great measure by the adoption of more tightly fitting garments, which tend to hinder the action of the muscles of the abdomen, and also prevent the lower part of the chest from fully expanding, though the upper part is still able to move freely. Thoracic breathing is, therefore, accentuated by any form of tight clothing. It is obvious that for healthy physiological breathing it is necessary to make full use of the cubic capacity of the chest. In quiet breathing (14-17 times per minute and slightly more frequently in children) about 30 cubic inches of air (say, nearly a pint) are taken into the chest: this is called the *tidal* air. The chest can contain in addition to this about 120 cubic inches if the inspiration is as deep as possible: this is the *complemental* air. After the tidal and complemental air has been breathed out, another 100 cubic inches of air can still be expelled from the lungs by forcible expiration: this is the *supplemental* air, which is held in reserve during ordinary breathing. There remains in the lungs another 100 cubic inches, the *residual* air, which cannot be breathed out. It is, therefore, never possible completely to empty the chest of air. We thus have, in the adult chest, the following:—

Tidal air	-	-	30 cubic inches	} This constitutes the <i>vital capacity</i> of the chest = approximately 250 c. ins.
Complemental air	-	-	120 cubic inches	
Supplemental air	-	-	100 cubic inches	
Residual air	-	-	100 cubic inches.	

Air should be breathed in through the nose and not through the mouth. By nasal breathing the air, before passing into the lungs, is warmed, moistened, and filtered, and thus is less likely to injure or irritate the air vesicles.

Pure air, as it is breathed into the lungs, contains a large amount of oxygen and only a small percentage of carbonic acid gas. When this air reaches the air-sacs the oxygen passes through the thin wall of the air-sac and reaches the blood which is contained in the network of blood-vessels covering it. This is impure blood from the tissues, which is poor in oxygen but rich in carbonic acid gas. The blood receives this fresh supply of oxygen from the air and it gives up the carbonic acid gas, which passes into the air-sac to replace the

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oxygen and is breathed out, while the blood returns to the heart purer and again in a fit state to convey nourishment to the body. Thus expired air differs from inspired air in that it contains less oxygen and much more carbonic acid gas and other waste products.

Excretion.

Besides the carbonic acid gas there are other impurities in the blood which must be removed, and this removal, or excretion as it is called, is accomplished chiefly by the kidneys, and to some extent by the skin.

In the *skin* we find large numbers of sweat-glands, which have minute openings on the surface, the "pores." These sweat-glands separate from the blood in the skin a watery fluid, the sweat or perspiration, and this contains some of the impurities of the blood. It is constantly escaping on to the surface, where it either evaporates or is absorbed by the clothing, and eventually the last traces are removed by washing. The skin has also an important action in regulating the loss of heat from the body, and so helps to maintain the body at an even temperature. When the skin is flushed with blood and feels hot, heat is rapidly lost from the surface of the body. When, on the other hand, the skin looks pale and feels cold, the loss of heat from the body goes on much more slowly.

The *kidneys* act on a larger scale in a somewhat similar way to the sweat-glands, and remove many other waste products or impurities from the blood. The watery fluid they excrete is called the urine, and this is also expelled from the body. The skin and kidneys act in harmony: when the skin is hot in the summer, for example, the formation of perspiration goes on actively, while the urine is diminished; in the cold weather the excretion from the kidneys is increased, while the sweat is reduced in quantity.

Digestion.

Digestion, which begins in the mouth and is continued and completed in the stomach and intestines, is the process by which the nutritive portions of the food are rendered soluble, and fit for absorption into the blood. This is accomplished by the various digestive fluids produced by the alimentary canal, aided by the contractions of the muscles contained in the wall of the stomach and intestines. By means of these muscular contractions the food is vigorously moved about in the stomach and thoroughly mixed with the digestive fluid, it is in due time expelled from the stomach into the intestines, and is similarly passed along the whole length of the bowel, while the residue eventually leaves the body in the same way. It will thus be seen that these muscular contractions play a most important part in the digestion and absorption of nourishment. When the muscular activity is for any reason decreased, the food is not sufficiently mixed with the digestive fluids, while the useless part tends to accumulate in the intestine instead of passing onwards and so indigestion and constipation, with their attendant evils, are apt to result.

The Nervous System.

The nervous system, consisting of the brain, spinal cord and nerves, has control of all parts of the body; it serves to link up and connect them and ensures harmonious working between them. The brain, in which every portion of the body is represented, is the central authority. It receives messages and sensations from the skin or other parts by way of the nerves or the spinal cord. It translates them, despatches the answering messages and controls and regulates the resulting actions and co-ordinations. The nerves, which conduct messages to and from the brain and cord, form a complete network among the tissues, somewhat similar to the system of blood-vessels. The brain has also control over involuntary muscles and movements, such as the heart and circulation, respiration, and the processes of digestion, each of these systems being represented by its "centre" or special portion of brain tissue.

We may now turn to the application of these facts to the teaching of physical exercises:—

The Work of the Muscles.

When a muscle is made to contract repeatedly an increased amount of muscle substance is used up to supply the energy required for the work, and an increased supply of nourishment will therefore be necessary to make up for the loss. Any additional work also means an increase in the poisonous waste products which are taken up and removed by the blood. The presence of these in the blood rapidly affects and stimulates to greater activity the special centre in the brain which controls the action of the heart, and consequently the heart begins to beat more rapidly and sends an increased amount of blood to the muscles and other parts of the body. In this way the additional nourishment required by the muscles is provided. Muscles which are regularly and suitably exercised become larger, stronger, and more capable of work. This is partly due to the increased activity of the muscle tissue itself, which becomes more capable of absorbing and making use of the nourishment which is thus brought to it; it is also due to the increased activity of the circulation, which provides them with an additional supply of blood and consequently of food. Exercise not only increases the size of a muscle, it also removes from it unnecessary fat and other tissue which is likely to decrease its power to contract, and so properly regulated physical exercise produces a better and more useful muscular system.

The bones also increase in size with the muscles and for the same reasons—increased supply of blood and increased tissue activity. The skeleton as a whole, therefore, becomes bigger and heavier than would have been the case had there been no physical training. The joints also participate in these changes and are rendered more flexible and supple as well as stronger by exercise.

Muscular Fatigue and Overwork.

When a muscle continues to work vigorously, the waste products tend increasingly to be formed more rapidly than they can be conveyed away by the blood, and the longer the work continues the more these waste materials accumulate locally in the muscle. There they exert their poisonous effect on the muscle-fibres and still more on the endings of the nerves which pass to these fibres; as a result the muscle becomes less and less fit to work, and finally is unable to contract at all. It is then said to be "fatigued," or tired. If the muscle is now allowed to rest for a sufficiently long time the accumulated waste products are gradually removed by the blood, which at the same time brings the nourishment necessary for the repair

The way you look on the appearance of that face in the
mirror is different.

The Work of the Blood

When a muscle is made to contract especially an increased
amount of energy is used in the form of oxygen and energy
supplied by the body, and an increased supply of oxygen will
be necessary to make up for the loss. Any additional
energy that is needed is obtained in the potassium ions present
which are taken up and removed by the blood. The presence
of these in the blood helps to stimulate the greater
activity of the muscle fibers and also helps to prevent
the blood from becoming too acid. The blood also carries
the heat and other waste products of the body to the
lungs and other parts of the body. In this way the blood
is the great regulator of the body's temperature and
the supply of energy. It also carries the oxygen and
energy to the cells of the body. The blood also carries
the waste products of the body to the lungs and other
parts of the body. This is really the great work of the
blood. It is the great regulator of the body's temperature
and carries out of the body the waste products of the
body. It also carries the oxygen and energy to the cells
of the body. The blood also carries the waste products
of the body to the lungs and other parts of the body.
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and carries out of the body the waste products of the
body. It also carries the oxygen and energy to the cells
of the body. The blood also carries the waste products
of the body to the lungs and other parts of the body.

Muscle Fatigue and Recovery

When a muscle continues to work, especially the waste
products that are necessary to be carried away. The
waste products are carried away by the blood, and the
blood also carries the oxygen and energy to the cells
of the body. The blood also carries the waste products
of the body to the lungs and other parts of the body.
It is the great regulator of the body's temperature
and carries out of the body the waste products of the
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and restoration of the muscle tissue, and this then by degrees recovers its original strength and power. If the period of rest is not sufficient, the muscle will not have entirely recovered from the fatigue, and will therefore be unable to work so well or for so long a period. If this occurs frequently, and the muscle is as a result almost continuously subjected to the influence of these poisonous products, the efficiency and capacity of the muscle sooner or later becomes seriously impaired, and it is said to be "overworked." It has been well said that "Overwork is nothing but fatigue pushed to an extremity. Between fatigue and overwork there is simply a difference of dose in the substances which poison the organism; the substances are the same and have the same origin; they are always the waste products of combustion produced by work." It must be remembered that fatigue, of any degree, though it may begin locally, does not long remain confined to the part of the body where it originates, but gradually extends until the whole system is affected. Overwork, therefore, especially if continuous or frequently repeated, not only injures the muscles, but also the body and its functions as a whole, rendering it less capable of mental or physical exertion, more liable to illness and disease, and less able to resist illness if it does come.

The stiffness and local tenderness which follow unaccustomed muscular exertion is probably also partly due to the action of these waste products. When the muscle is trained to exercise they are either formed in a smaller quantity or they are more readily removed, and stiffness does not follow. The tenderness is also possibly due to the actual injury of some of the muscle-fibres caused by the unusual or violent contractions, and this would explain why the tenderness so often persists for several days and after other fatigue effects have passed away.

The Circulation.

Increased exertion, as already explained, is followed by increased activity of the heart, which beats more frequently to keep pace with the demand of the tissues for a larger blood supply. Suitable exercise affects the heart muscle just as it affects ordinary muscles, and it becomes more efficient and healthy. On the other hand, overwork, or violent efforts, such as mountain climbing, or running a race when not in training, entail a serious strain on the power of the heart, which not unfrequently results in permanent damage or disease. The return of blood to the heart from the muscles is partly brought about by the relaxation and contraction of the muscle-fibres which occurs in exercise. This aids the alternate filling and emptying of the deep veins in the muscles, and so helps to maintain the circulation, both in blood-vessels and lymphatics.

Respiration.

When the impure blood resulting from physical exertion reaches the brain, it stimulates not only the centre controlling the heart, but also that which governs respiration. In consequence the breathing becomes deeper and more rapid, and a larger volume of air is breathed in and out. This means that more oxygen enters the lungs, more blood is purified, and more of the poisonous carbonic acid gas is got rid of. Occasional deep breathing, which causes the chest walls and lungs to expand to their fullest capacity, is of the greatest use in promoting their healthy and complete development.

Breathlessness.

Certain violent exercises or efforts are liable to cause breathlessness. This is characterised by a feeling of distress and inability to breathe normally. It is usually produced by movements involving a considerable number of muscles, when a large amount of work is done in a short time, as for instance running, jumping, climbing. It is a particular form of fatigue caused by large doses of waste products, chiefly, perhaps, carbonic acid gas which enter the blood in consequence of the exertion. The heart and lungs are stimulated, therefore both act more rapidly and the lungs become very full of blood, containing much carbonic acid and little oxygen. The carbonic acid gas is meantime being produced much more rapidly than it is being removed from the body, and in the endeavour to cope with this the respirations become increasingly irregular and excessive. This really defeats its own ends; the inspirations being comparatively deep, while the expirations are shallow and difficult, less and not more carbonic acid gas is eliminated, and less oxygen is introduced into the blood. The centre controlling the heart is soon injuriously affected by the excess of this gas, the heart becomes less able to force the blood onward through the lungs, it beats more and more feebly and rapidly in the effort to do so, and this strain greatly accentuates the general feeling of distress. The breathlessness passes away with rest, as the carbonic acid gas is gradually removed, oxygen is supplied, and the body is then frequently able to adjust itself to the continuation of the exertion, which originally produced the breathlessness, without further difficulty. This is known as gaining "the second wind," and means that the heart and lungs are working in harmony and that the carbonic acid gas is being rapidly and satisfactorily eliminated.

When more or less in training, though temporary breathlessness may occur, it is possible to gain the "second wind" without a rest as the heart and lungs are able to adjust themselves more readily to the demand for the increased elimination of carbonic acid gas.

The Skin and Kidneys.

Another result of muscular exercise is the formation of heat, the more vigorous the exercise the more heat is produced. This heat must be disposed of in some way if the body is to retain its usual temperature. In consequence of the quickened circulation the skin becomes full of blood, and is flushed and hot, while the excretion of the sweat goes on so actively that visible drops of perspiration appear. The evaporation of this moisture causes rapid cooling of the surface of the body, and the loss of a considerable amount of heat, so that the excess of heat formed is gradually dissipated. At the same time, by means of the increase in the perspiration, additional impurities are removed from the body. It is because of the cooling caused by evaporation from a moist surface, that it is necessary to change damp clothes and so avoid catching cold after violent exercise. This loss of moisture from the body is largely the cause of the thirst which is experienced after physical exertion. The action of the skin shares to some extent in the work of the kidneys, to which the duty of removing most of the remaining impurities from the blood is allotted.

The Digestion.

The organs of digestion, in common with the rest of the body, receive a more abundant supply of blood in consequence of physical exercise, and the blood itself circulates more rapidly. The functional activity is thus increased, and the appetite, digestion and absorption of the food improved. But for this very reason it is important that physical exercises should not immediately follow a meal, because in that case blood would pass to the muscular instead of to the digestive organs.

The more vigorous action of the muscles of the intestines which accompanies the improvement in the general muscular tone, together with the mechanical assistance given to the onward passage of the food by the contractions of the abdominal muscles, serves to prevent accumulation in the lower part of the bowel, and constipation is thus avoided.

The Nervous System.

The part played by physical exercise in the development of the brain centres has already been referred to, but the general tone and condition of the whole nervous system is also benefited in common with the rest of the body. It must not be forgotten that the improved quality of the muscular work, which always results from suitable physical training, is due even more to the greater efficiency of the nerve centres than to the actual growth and development of the muscles themselves. Actions which appear

to be the most simple depend in fact upon an extremely complex nervous and muscular mechanism, and one of the objects of training is to ensure that every action is carried out with as little fatigue and dissipation of energy as possible.

The general physical training given in the school will thus prepare the way for the more accurate and special training necessary in after life in learning any skilled trade or profession.

Summary.

To sum up : The chief effect of suitable physical exercise is to improve the general nutrition of the body.

By the "nutrition" of the body is meant the general activity and functions of the various tissues, including their power to absorb and make use of the nourishment that is brought by the blood, and their ability to eliminate and remove the waste products which are constantly being produced in greater or less amount; the processes, in other words, which are necessary to the healthy life of the organism as a whole, as well to its individual parts. Exercise serves to promote all these activities, and by encouraging the harmonious co-operation and working of the various organs, necessarily exerts a beneficial influence on them all.

THE HYGIENE OF PHYSICAL TRAINING.

(1) The Relation to the Health of the Child.

The exercises in the syllabus have been carefully selected to suit children between 7 and 14 years of age. It is probable that the physical capabilities of these children have been under rather than over estimated, so that the exercises, if rightly taught, may be safely performed by children of comparatively weak physique. In many schools, however, there is a certain proportion of scholars whose general physique, on account of illness, underfeeding, or an unsatisfactory physical environment, is such that physical exercises of any kind are likely to do harm rather than good. There are certain conditions which the teacher should learn to look for and recognise among the children, and in any case of uncertainty the child should be submitted for medical examination as soon as possible.

One of the objects of Medical Inspection in the school is to discover defects among the children, especially those, whether mental or physical, which may interfere with school work, and so prevent the child deriving full benefit from the curriculum, or which may cause the child to suffer positive harm from the ordinary school course. The teacher can do much to aid the doctor in this respect by noticing and observing children who

to be the most serious effect of lack of exercise is the development of obesity and associated conditions. The lack of the stimulus of exercise is a factor in the development of many of the diseases of the heart and lungs, and of the nervous system.

The general physical training given in the school will thus be a preparation for the development of a vigorous physique, and a basis for the maintenance of health and vigor in old age.

To secure the greatest effect of regular physical exercise it is important to maintain the regularity of the work.

In the "quiet time" of the body is needed the general activity and function of the various organs, including the joints, the lungs and other parts of the respiratory tract, and the heart, and the circulation to the various parts of the body. The regularity of the work is thus a factor in the healthy life of the organism as a whole, as well as in the individual parts. Exercise serves to prevent all these conditions, and by encouraging the harmonious cooperation and working of the various organs, necessarily exerts a beneficial influence on them all.

THE HYGIENE OF PHYSICAL TRAINING

(a) The Relation to the Health of the Child

The exercises in the villages have been especially directed to the children between 7 and 14 years of age. It is probable that the physical capabilities of these children have been under rather than over-estimated, so that the exercises of regular nature may be well performed by children of comparatively weak physique. In many schools, however, there is a large proportion of children whose general physique is so weak that the undertaking of an extraordinary period of exercise, beyond that physical education which has been held to be best, rather than good. There are certain conditions which the teacher should look for, and which may render the children, and in some cases of uncertainty the school should be submitted for medical examination as soon as possible.

One of the objects of regular instruction in the school is to discover which are the children, especially those, whether naturally weak or over-fat, who are unable to do school work, and to prevent the physical training of these boys. The opportunity of which may be given to the child to do his physical work in the morning, when the body is fresh, and the mind is clear, and the day is the most profitable for working and observing children who

are in any way abnormal. Among the conditions to be watched for, especially during physical exercise, are:—

(i) *Breathlessness*.—Occasional short and violent efforts even to the production of breathlessness are made by all healthy children in natural play. They form an important factor in physical development, and for such healthy children an occasional 15 or 20 seconds of hard running or skipping is entirely good. But the regular appearance of breathlessness in a child during the performance of exercises in this syllabus is a danger signal, and indicates either that the child is too tightly clothed or that the exercise is causing undue physical strain.

(ii) *Signs of General Fatigue* should also be carefully noted. For instance, a listless, languid way of performing the exercises; inability to give attention; a tired attitude, with the head bending forward, the shoulders stooping, and a general relaxation of the limbs. There may be a puffy look about the eyes, due to want of tone of the small muscles of the face; sometimes the child will frown and screw the eyes up, and even make nervous grimaces and movements. The general muscular tone is lowered because the poisonous waste products which are formed in the body, and which cause the fatigue, act largely on the nerve centres which govern the muscles.

(iii) *Pallor*.—The teacher should notice if a child is unusually pale during the exercise, and especially if this paleness increases. It may be due merely to a temporary cause, such as the heat, or fatigue, and is often seen with anæmic children and when the ventilation is inefficient. The pallor may, however, have a much more serious origin, as, for instance, in heart disease.

(iv) *Fainting* may occasionally happen with any child, especially in the hot weather or if the child is under-nourished; in such a case it may be only necessary to allow him to rest for a time in the fresh air. If the child is subsequently ill or if the fainting should occur again, especially after exercise, it is important that he should be excluded from all physical work until he has been medically examined.

(v) *Mouth Breathing*.—All the children who habitually breathe with the mouth open should be noted, and special attention given to them during breathing exercises. Mouth breathing may be due to habit only, and can then often be corrected by the teacher; but frequently there is some actual obstruction to nasal breathing and the child is unable to breathe in the correct way. Such children keep their mouths constantly open, the nostrils are small and contracted, and the expression is vacant and stupid. They are often deaf, and consequently inattentive and dull. The voice is thick and flat, they are very liable to constant colds, to sore

throats, and, especially the younger ones, to bronchitis. Such children should always be presented for medical inspection, as the appropriate treatment is usually followed by a very marked improvement, both mental and physical.

(vi) *Malpositions*.—The teacher must remember that physical training does not begin and end with the regular physical training lesson. Exercises practised a few times in the week will be of little avail unless care is taken at the same time to secure good positions during other lessons, such as reading, writing, drawing, needlework. Standing for long periods, kneeling on seats, stooping over the desk, hunching up the shoulders or twisting the body and limbs should not be allowed, as these movements tend to produce malformation of the chest and encourage the development of spinal curvature. It must also be remembered that a child is incapable of remaining for very long in one attitude, and therefore frequent change of position should be permitted. Moreover, a child should never be expected to sit or stand in a position of strain, and any placing of the arms, so as to interfere with the movements of the chest, such as folding them behind or in front, must be avoided.

(2) *School and Personal Hygiene.*

There remain for consideration several points of importance with regard to school and personal hygiene in relation to physical exercises to which reference will now be made.

Fresh Air.—During all exercises, and more especially during the few minutes of daily exercises in the class-room, the doors and windows should be opened so that while the children are in active movement the rooms may be well flushed with fresh air.

It is most necessary to remember that ventilation which may be sufficient while the children are at rest, becomes quite inadequate during active movement. Exercises in an impure atmosphere may do more harm than good, because the children are breathing in increased quantities of foul air. Whenever possible exercises should be performed in the open air.

It is desirable that dust should be avoided as far as possible. When exercises are done in dirty class-rooms or halls or in unpaved playgrounds, dust is added to the other impurities which may be present in the air, and is a further source of danger, as it is apt to cause among other things much irritation of the throat and lungs.

The teacher should avoid any practices which are likely to increase the amount of dust in the air. For example, if the blackboard is cleaned with a dry duster, a great deal of chalk dust always escapes into the room. If, on the other hand, a damp cloth is used, the chalk adheres to the duster and does

The first of these is the fact that the present
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The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the success of any business and for the protection of the interests of all parties involved.

The second part of the document provides a detailed description of the various types of transactions that may occur. It includes a list of common transactions and explains how they should be recorded and classified. This section also discusses the importance of using consistent accounting methods and the need to regularly review and reconcile the records.

CHAPTER II: ACCOUNTING METHODS

This chapter discusses the various accounting methods that can be used to record and summarize transactions. It compares the different methods and explains the advantages and disadvantages of each.

The first method discussed is the single-entry system, which is the simplest and least expensive. It involves recording only one side of each transaction. The second method is the double-entry system, which is more complex but provides a more complete and accurate picture of the business's financial position.

The third method discussed is the cost accounting system, which is used to track and control the costs of production. It involves recording all the costs incurred in the production process and comparing them to the actual costs. This method is used to determine the most efficient way to produce goods and services.

The fourth method discussed is the budgeting system, which is used to plan and control the business's financial activities. It involves setting a budget for each department and comparing actual results to the budget. This method helps to identify areas where costs are being exceeded and to take corrective action.

The fifth method discussed is the variance analysis system, which is used to identify and explain the differences between actual results and the budget. It involves calculating the variance between the actual and budgeted amounts and determining the reasons for the variance. This method helps to improve the accuracy of the budget and to control costs more effectively.

not help to increase the dust already present in the air. It may also perhaps be desirable to add a word as to the necessity for maintaining schools and class-rooms in a thoroughly clean state. A large amount of dirt is necessarily brought in by the children, and dirt in any form always tends to cause unhealthy conditions. Soap and water form one of the best disinfectants, and if the floors are frequently scrubbed, the walls and furniture washed, and dust prevented from accumulating on the window-sills, shelves or in other places, illness, especially of an infectious nature, is likely to occur much less often.

Dress.—While the exercises included in the course are of such a nature as to admit of their being done in ordinary school dress, there is no doubt that the efficacy of many of the exercises, both for boys and girls, would be greatly enhanced by the wearing of suitable clothing and especially of suitable shoes. Such exercises as "Heel raising" or jumping cannot be properly performed in badly fitting and unsuitable foot-gear, and it is recommended that, wherever possible, a supply of gymnastic shoes should be made part of the school equipment. Heel-less shoes with leather soles are more comfortable and cleanly than the rubber-soled shoes usually provided. Special dresses for girls should be of such a nature that they may be worn as part of the everyday clothes (*see* Appendix D., p. 164). The teacher should direct the attention of the girls to the injurious effects which may arise from tight underclothing and corsets. Tight collars or sleeves, &c., should also be avoided. Children should be taught that it is unhealthy to wear too many and too thick garments, which hamper the movements and consequent development of the limbs and body, and prevent the proper action of the skin. It is essential that instruction in physical exercises should be given to the older girls by women teachers, so that the opportunity of giving advice as to dress and matters of personal hygiene may be taken advantage of to the fullest extent.

In the case of pupil-teachers and students, a suitable costume should always be insisted upon, and they should be taught physical exercises by an expert. Otherwise, when they come to the Training College, or begin to teach in the schools, their movements will be stiff, hampered and awkward, and they will not acquire the ease and grace of movement which is essential to a good teacher of physical exercises.

The women teachers themselves should be encouraged to wear gymnastic costume, especially those who have taken a course of physical training. It is quite impossible to illustrate many of the movements efficiently if a long skirt is worn, and the example of a suitably dressed teacher is of the greatest value, especially when it is necessary to correct the older girls in matters of dress.

Moreover, it will assist the girls to realise more clearly the many advantages, both practical and æsthetic, of an appropriate costume.

(3) *The Relation of Lessons in Physical Training to School Lessons.*

In order to obtain the best results from physical training it is very desirable that lessons of 20-30 minutes should be given as frequently as the curriculum will allow. At least there should be three or four periods in the week when physical exercise should be taken as a regular lesson, and if only a limited time is available in the week for this purpose, frequent lessons of short duration will be found more profitable than longer lessons given at greater intervals (*e.g.*, four lessons of 15 minutes each are to be preferred to two lessons of half an hour).

Learning physical exercises demands concentration of attention and mental exertion comparable in all respects to that required in other school lessons. Performance of the exercises entails a certain amount of fatigue, such as is necessarily involved in all profitable efforts of an educational nature, and this point should be kept in mind by teachers, who should not regard the physical training lesson as a complete relaxation from school studies. There is, therefore, the need for adjusting the length of the lessons to the age of the children and for observing a suitable progression of exercises so that at each stage some effort will be required, but an effort which never amounts to strain, while a higher degree of precision and accuracy may be insisted upon with increasing practice and advancing years. Physical exercises should, for this reason, not be taken when the children are suffering from mental or physical fatigue. If this should ever be necessary, the lesson must be limited to simple, easy and recreative movements.

*"Recreative" Exercises.**—In addition to the regular lessons, certain well-known simple exercises should be used in the class-room for their recreative effects. The exercises best suited to this purpose are those which can be done quickly and without mental effort, their effect depending largely upon the amount of energy put into muscular contraction in a given time. For this reason massive, simple and rapid movements are best. The effect being comparatively transient, such exercises require frequent repetition to secure permanent benefit. *They should be performed in the class-room several times daily with open windows for two or three minutes at a time.* They may, if necessary, be taken by the children while at their desks, and every considerable period during which the children are confined to the class-room continuously should be broken up by an interval of

* See Appendix B., p. 160.

with attention. Children who have been for a long time at school and are beginning to read and write are not at all interested by a few minutes' work in such matters and require encouragement.

It is, however, as a consequence of the fact that the children are not interested in such matters that it is necessary to make them interested. This is done by the teacher who has to be very patient and to give the children as much help as they need. The teacher should be very kind and should not be afraid to be silly. The children should be encouraged to read and write and to do so as much as possible. The teacher should be very patient and should not be afraid to be silly. The children should be encouraged to read and write and to do so as much as possible. The teacher should be very patient and should not be afraid to be silly. The children should be encouraged to read and write and to do so as much as possible.

THE END

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The first was a letter to the Secretary of the State Department, dated August 1, 1945, in which I stated that I had been in contact with the Japanese government and that I had been told that they were willing to accept the terms of the Potsdam Declaration.

I then stated that I had been told that the Japanese government was willing to accept the terms of the Potsdam Declaration, and that I had been told that they were willing to accept the terms of the Potsdam Declaration. I then stated that I had been told that the Japanese government was willing to accept the terms of the Potsdam Declaration, and that I had been told that they were willing to accept the terms of the Potsdam Declaration.

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such exercises. Children who have been for a long time at one task and are becoming listless and inattentive are at once refreshed by a few minutes' exercise in such quick and massive movements.

Music.—Music is at times made use of in the physical training lesson and is of great value if properly employed. It must, however, be clearly recognised that it should not be used in the formal lesson with the regular physical exercises, because exercises performed to music are carried out rhythmically, more or less mechanically, and without much thought or concentration of mind. For this reason the Educational and Developmental effects are greatly diminished, though fatigue is lessened and the recreative effect is markedly increased. Music should, therefore, be used in Infant classes, where it is especially important to avoid fatigue and to make the lessons bright and cheerful; it may also be used to accompany marching or dancing steps, when teaching the older classes, either if the children are tired, or in order to avoid monotony and render the lesson more recreative.

INFANT CLASSES.

The character and degree of instruction in Physical Exercises in Infant Classes, that is, generally speaking, of children under 7 years of age, as in other subjects, is a matter which may to some extent be left to the discretion of the teacher.* These children should have extremely short and varied lessons, as they are physiologically incapable of keeping their attention on one subject for long at a time, and any attempt to force the immature brain to do work for which it is not yet fit, results in nerve strain and fatigue and may seriously retard subsequent progress at school. Infants cannot be expected to sit still as long as older children, and must therefore be allowed plenty of scope for free movements. They should not stoop over their work nor should they bring it nearer the eyes than 10-12 inches. No work on a small scale, such as fine sewing or writing between narrow lines, which requires exact accurate movements or is liable to cause eye-strain, is to be approved in an Infant School. Free arm drawing, from the standing position, on blackboards or wall surfaces, may be regarded as a valuable variety of physical exercise for such children. Intervals for play and organised games should be frequent, and simple nutritive exercises, such as marching or running, are very useful. The exercises should be quick rather than slow, free rather than constrained, large and massive rather than fine—simple, rhythmical and easily learned. It is also very desirable

* See Appendix C., p. 161.

that the liking for definite games should be established at an early age, and the children should be encouraged to play these rather than to spend their free time in aimless running about the playground.

Accuracy or precision of movement is hardly to be expected from Infants. The exercises should be of the massive type, so that large groups of muscles only are used, and breathing exercises should also be frequently given. In these Infant classes music should be used as far as possible; the exercises are more easily performed to a definite rhythm, the fatigue is consequently diminished and the enjoyment greatly increased.

CONCLUSION.

To sum up, there are certain elementary necessities which are required for a healthy life. The child must be fed, sufficiently and suitably; it must be properly clothed, warmed and housed; it must have enough sleep, rest and fresh air, and the needful attention to personal hygiene and cleanliness. These in themselves, together with the natural walking, running and jumping done by any ordinary child, will often suffice to produce a healthy and a well-developed body and brain, since even apparently simple actions, such as standing or walking, require the combination and co-ordination of many muscle groups. It is, however, always desirable, and in many cases necessary, to give further aid to the physical development. This may be done in two distinct ways: (1) by formal, set physical exercises, such as are given in the Tables of this Syllabus; and (2) by physical exercises having a more recreative or æsthetic character—for example, games and sports of various kinds and many varieties of dances. Both these two classes of exercise are needed, each supplementing the effect of the other.

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money and the whole thing is to be done in a way
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CONCLUSION

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CHAPTER II.

GENERAL DIRECTIONS TO TEACHERS.

Method of giving the Lesson.

In order to obtain the best results from a lesson in Physical Training it should be rendered as enjoyable and interesting as possible to the children. This will depend partly on the selection of exercises, but also, to a very great extent, on the personality and methods of the teacher. Impatience on the one hand, and hesitation on the other, should be avoided, and, while cheerfulness is greatly to be desired, the manner should be firm and decided in order that discipline may be maintained.

Selection of Exercises.

With regard to the selection of exercises, a certain number of familiar movements which can be performed easily with energy and vigour should always be given. In addition, running and jumping and the various kinds of marches and games are always popular with the class, and are very valuable in re-awakening the interest of the children after comparatively dull or difficult exercises. New exercises should be judiciously introduced, but too much of the lesson should never be taken up with explaining and teaching fresh movements. A game should be introduced into every lesson, as far as possible, if only for a few minutes.

Children should also never be kept too long in any one position, particularly a difficult position, neither should an exercise be performed so often as to become wearisome. All stiff, strained or unnatural positions should be avoided.

Whilst adhering closely to the Syllabus, the teacher must *always* be able to give the lesson without reference to the Syllabus during the class. This will greatly help to prevent the instruction becoming tedious to the scholars, will make the lesson far more effective and, in addition, will save valuable time. Before taking a lesson, the teacher should endeavour to look over his Table and make sure that he remembers the exercises and the order in which they come. He should consider how he intends the lesson to go, what new exercises, if any, will be taken, how they should be taught, and how much time can be given to each exercise. When the teacher has a good grasp of the lesson, and knows exactly what is to be done, he will pass without hurry or loss of time from one movement to another, with that quiet confidence and decision of manner which do so much to keep awake interest and attention, and to gain a willing and cheerful response from the children.

Besides making himself familiar with the Table of exercises to be taught, the teacher must also consider the size and general arrangement of his class, in order that the space available for physical exercises may be utilised in the best possible manner.

Commands.

Commands should be given just loudly enough for all the children to hear distinctly. Shouting is quite unnecessary and leaves the teacher no reserve for suddenly awakening the attention of the class. A quiet command can be made as emphatic as a loud one because its emphasis depends upon its distinctness and firmness and not upon its loudness. The tone of voice should be varied so as not to become monotonous, and every word should be spoken with distinctness.

Commands should always be given in a cheerful lively manner, as this has a great effect in making a class work happily and with interest.

Every command should consist of two parts, the *explanatory* and the *executive*. The explanation should show as clearly as possible what is to be done, and the executive word indicates when the movement is to begin. For example :

Explanation.	Executive word.
Head backward - - -	- <i>bend.</i>
Left foot forward - - -	- <i>place.</i>
Arms upward - - -	- <i>stretch.</i>

It is sometimes necessary to precede the explanation by a *Caution*, as, "Without raising the shoulders, head backward—*bend.*"

The explanation should always be given slowly and distinctly.

The method of commanding the executive word varies. For a quick movement it must be given sharply, and in a higher tone than the explanation. For a slow movement it should be given more smoothly and deliberately. It must in fact indicate as far as possible the way in which the exercise is to be carried out. Arm stretchings, for instance, are decidedly quick movements and must be commanded quickly. Arm swingings are somewhat slower. Arm raising or parting is taken and commanded slowly. Foot placings are performed more quickly than lunging. The trunk movements are nearly all essentially slow movements.

A pause must be made before the executive word is given, during which the class can prepare for the movement to be carried out. This pause should not always be of the same length, but may vary, in order that the children should not fall into the habit of anticipating the executive word. With beginners, and with unfamiliar exercises, a longer pause than usual is as a rule necessary. The teacher must also learn to control his own voice and breath,

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The Rights of the Citizen

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The Rights and Obligations of the Citizen

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The first thing I should mention is that the table is very simple and easy to use. It contains all the information you need to know about the project. The data is presented in a clear and concise manner, making it easy to understand. The layout is clean and professional, and the font is legible. Overall, it is a well-designed and informative document.

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Category	Item
Item 1	Item 1
Item 2	Item 2
Item 3	Item 3

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so that he may be able to give the command in the right way and at the right time.

If the teacher finds that the ordinary command for a movement does not exactly express the way in which he wishes it to be done, he may add words expressing this to the explanatory part of the command. For example, "quickly," "slowly," "slightly," "twice," "by numbers," etc.

Exercises may be carried out to full words of command, or, as they become familiar, to numbers. When a movement, or a series of movements, is to be repeated, there is no need to repeat the whole command, but the word "Repeat" may be used. Take, for example, Heel raising and Knee bending. This may be commanded as: "Heels—*raise*, Knees—*bend*, Knees—*stretch*, Heels—*lower*. Repeat, 1, 2, 3, 4."

It may also be given as "Heel raising and Knee bending by numbers—1, 2, 3, 4. 1, 2, 3, 4."

As the exercise becomes still more familiar, and with older children, the numbers may be omitted. The command is then, Heel raising, and Knee bending—*begin* (or *commence*). The class performs the exercise once, judging their own time, and for further repetitions the command *Repeat* may be given.

The Position of the Teacher.

The position of the teacher while conducting the class is a matter of importance. The most common faults are either remaining in one place during the whole of the lesson, or moving aimlessly about. When explaining or illustrating an exercise the teacher should stand where he can see, and be seen by, every child in the class. At other times he should move round the class as occasion requires for the purpose of correcting faults and in order better to observe the way in which the exercises are being performed.

Illustration and Explanation of Exercises.

All exercises should be taught as far as possible by illustration, the teacher first performing the movements himself or causing them to be performed by a scholar placed in front of the class. This should be accompanied by a few words explaining the essential part of the exercise and any special points to be noted. Minor details may be introduced afterwards. It is important to remember to teach one thing only at a time until the exercise is fully understood. All one-sided exercises must be performed an equal number of times to the right and left. Later, illustration or explanation should only be given when it is necessary to remind children of a particular movement or to correct errors. As little time as possible should be taken up in this way, and the

children should be encouraged to remember the various points in the exercises without constant repetition of the explanations. The teacher should seldom, if ever, perform the exercise with the children, as in that case it is not possible for him to see that it is being properly carried out.

The Correction of Faults.

Every exercise is designed to produce some specific effect, and any departure from the correct method of performing it detracts from the desired effect, or may even tend to cause definite harm. The correction of faults is therefore an important part of the instruction and requires a knowledge of the purpose and effect of the exercise, and of the faults which usually occur, together with the easiest way of correcting them. In the first place it is necessary to secure a correct starting position, because, if this is faulty, the movements taken from it cannot be accurate. Then the positions of the body and limbs during the exercise, the direction, distance and speed of the movements, must be carefully observed. Further, the teacher must show great patience when correcting faults, a scolding tone should never be adopted, but every effort made to encourage the children. Much individual variation exists in the capacity of individual children for performing physical exercises, and as long as reasonable attempts are being made to carry out instructions correctly he should not become impatient if the movement is not done accurately even after several repetitions. Every effort should be made to encourage children who are backward or behind the rest of the class, and it is important to distinguish between inability and carelessness. Backward children should never be exposed to ridicule, neither should they be incessantly corrected or they may lose courage and become indifferent.

There are two general methods of correcting faults :—

- (a) While the class is performing an exercise.
- (b) While the class is standing at ease.

The former method should be used only in the case of small faults which require little more than a word to secure their correction, as "Heads up," "Knees straight," &c. Should it be necessary occasionally during a complex exercise to make a longer correction or an additional explanation, the command *As you were* or *Attention* may be given, and after the fault has been corrected, the exercise should be recommenced. Faults of a more serious nature, or which affect a large number of children, should be corrected while the children "stand easy," the fault can then be explained and illustrated in detail.

It is occasionally necessary for the teacher to place the child in the correct position, especially in the case of younger ones ; this

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the various kinds of material provided for the purpose of
The teacher should make it clear that the children are to
the children are to be encouraged to use the material in
the manner of play.

The Character of Facts

Every child should be encouraged to experiment with the use of
the various kinds of material provided for the purpose of
The teacher should make it clear that the children are to
the children are to be encouraged to use the material in
the manner of play.

These are the general methods of teaching facts:

- (a) While the child is performing an exercise.
- (b) While the child is resting.

The former method should be used only in the case of small
facts which require little more than a word to make them
clearly understood. The latter method should be used in
the case of facts which require a longer sentence to make them
clearly understood. The latter method should be used in
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clearly understood.

It is important to remember that the child should be
encouraged to use the material in the manner of play.

practice should not be employed too freely, and should never take the form of roughly handling or pulling the child about. All the faults in an exercise should not be corrected at once, but the worst and most important mistakes should first be put right and afterwards the less serious ones.

The best way of correcting a fault which is habitual, or which has arisen during the course of the lesson, is by the employment of corrective exercises (as *Head bending backward* for bad carriage of head and neck). It should be remembered that a fault is not fully corrected until the habit has been eradicated. If a child requires special correction involving considerable attention, he should be taken separately, so as not to waste the time of the others.

Unrestricted breathing should be maintained during all exercises, and the teacher should, if necessary, remind the children to breathe freely, especially during those exercises, such as *Trunk bending backward*, in which there is any likelihood of the breath being held.

Co-operation between Teacher and Pupil.

There is no part of school work in which the spirit and capability of the teacher are so clearly reflected in the performance of the children as in physical exercises. Whatever the period of exercise may be it should be full of purpose throughout. Every exercise should be performed "with intention," *i.e.*, with distinct realisation of its purpose and with the requisite vigour and decision. To secure this it is important that the teacher should get the children to take a keen and lively interest in the lesson, and to share in the *esprit de corps* of the class. This will best be accomplished by sympathy, cheerfulness, and the cultivation of a sense of partnership between teacher and pupil.

Above all, the teacher must remember that the ideals aimed at, which are discussed in the Introduction, can generally be most satisfactorily reached by a happy combination of ordered movements and freedom, so that, though discipline is maintained, the children find real enjoyment in their lesson.

CHAPTER III.

DESCRIPTION OF SIMPLE EXERCISES AND POSITIONS.

In order to render intelligible the general principles underlying the Exercises contained in this Syllabus it is first necessary to describe separately certain simple positions and movements of the arms, legs, head, and trunk.

It is from variations and combinations of these simple movements that the more difficult and advanced exercises are derived. It will therefore be understood that in order to be able to teach such exercises, it is essential that the teacher should be thoroughly familiar with the positions and movements set out in this chapter.

Attention.—With a few exceptions, all physical exercises used in elementary schools are taken originally from the standing position. It is therefore necessary that this position, the position of “Attention,” should be described.

The following are the main points to be thought of:—

Heels together, feet turned out at an angle of about 60 degrees.*
(Fig. 4.)

Knees straight.

Body erect. (This means the chest in its natural position, the back not unduly hollowed at the waist, nor the abdomen pushed forward. The weight of the body should be balanced equally on both feet.)

Shoulders drawn down, moderately back, square to the front.

Arms hanging straight and easily from the shoulders, with the palms turned inwards towards the body, the fingers being together and straight, the hands lightly touching the thighs.

Head erect, eyes looking straight to the front at their own level, chin drawn slightly in. (See Figs. 1, 2, 3.)

The position of Attention is one of readiness, but there should be no stiffness or forced, unnatural straining.

The class take this position on the command “*Attention.*” “*Attention*” is also given as the return command to the standing position for certain simple positions which have no corresponding return command of their own, as, for instance, “*Hips—Firm.*”

* Some authorities still prefer the angle of 90°, which was originally adopted by Ling. (See Fig. 3.)

CHAPTER VII

DESCRIPTIONS OF SIMPLE EXERCISES AND POSITIONS

In order to make intelligible the general principles underlying the exercises contained in this syllabus it is first necessary to describe separately a few simple positions and movements of the arms, legs, head, and trunk.

It is often a mistake to suppose that the simple positions and movements mentioned above are unimportant. It will therefore be explained that in order to be able to do any work worth doing it is necessary that the teacher should be conversant familiar with the positions and movements referred to in the chapters.

Attention.—With a few exceptions all physical exercises are in themselves wholly unimportant, save the mental position. It is therefore necessary that the position of attention should be described.

The following are the main points to be taught:—

Head upright, feet turned out at an angle of about 45 degrees (Fig. 2).

Neck straight.

Back erect. (This means the chest is to be raised, the shoulders held out, and the back not rounded at the waist, nor the trunk bent forward. The weight of the body should be balanced equally on both feet.)

Shoulders drawn down, not raised, back square to the front. Arms hanging straight and evenly from the shoulders, with the palms turned towards the feet, the fingers being together and straight, the hands lightly touching the thighs.

Head erect, eyes looking straight at the front at about eye level, chin slightly in. (See Page 4, 5.)

The position of attention is one of restfulness, but there should be a certain amount of muscular tension.

The chief aim of the position of attention is to establish a "habitual" mental attitude in the student's mind of the standing position of the body, which shall have no distracting effect upon the mind, and which shall be the starting-point for all other positions which have to be performed during the course of the lesson, the first position. (Page 4, 5.)

The position of attention is the starting-point for all other positions which have to be performed during the course of the lesson, the first position. (Page 4, 5.)

Attention." If a return command for an exercise exists, this should always be employed. For example, "Arms upward—*bend*. Arms downward—*stretch*." (Not "Attention.")



FIG. 1.



FIG. 2.

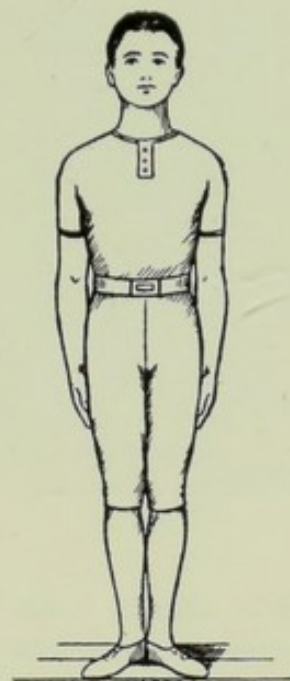


FIG. 3.

Standing at Ease.—This is a position which should be used when a rest is required, and whenever it is necessary to give any explanation. It should be used sufficiently often during a lesson to prevent the children becoming unduly fatigued. The left (or right) foot is carried about a foot-length to the side, and the weight of the body should be divided equally between both feet. The arms may hang loosely by the sides or the hands may be lightly clasped behind the back at the full extent of the arms. (See Fig. 5.)

COMMANDS :

STAND—*easy*. ATTENTION.

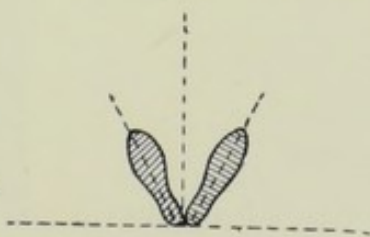


FIG. 4.

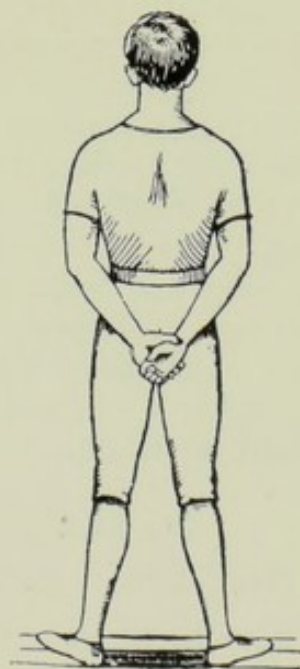


FIG. 5.



FIG. 6

The hands are placed on the hips. The fingers should be together in front and directed forward and upward, the thumbs being at right angles to the palms. The palms should rest firmly on the hips, and the wrists should be kept straight. The elbows should not be pressed either forward or backward, as each position tends to be and make right the upper part of the chest. (See Fig. 6.)

Comments:

Head and Neck

Comments:

Elbows are neither out to the sides nor forward. (See Fig. 6.)

We shall now proceed to consider the various groups of Exercises mentioned in Chapter VI, an Order and Progression (page 84), to which reference should be made.

I.—INTRODUCTORY EXERCISES.

Among these Introductory Exercises are included both Order Movements and Preparatory Movements. Order Movements will be considered in the Chapter on Class Arrangements. Preparatory Movements, consisting of Head and Leg Exercises, are dealt with here. The other Exercises, which also fall into this group, will be considered in the following chapter. Suggestions as to suitable starting positions, both of feet and arms, for all these Exercises are made in Appendix I, p. 114, to which reference should be made.

HEAD EXERCISES.

(1) Head Tending Forward.

The head is bent slowly backward as far as possible with the chin well drawn in. (See Fig. 7.)



FIG. 7.

COMMANDS :

HEAD BACKWARD—*bend*.HEAD UPWARD—*stretch*.[*Common faults :*

Raising the shoulders.

Carrying the chin forward

Bending the back.]

(ii) *Head Bending Forward.*

The head is bent forward, the chin is kept in and should not be allowed to rest on the upper part of the chest. (See Fig. 8.)

COMMANDS :

HEAD FORWARD—*bend*.HEAD UPWARD—*stretch*.[*Common faults :*

Carrying the shoulders forward.

Rounding the back.]



FIG. 8.

(iii) *Head Turning.*

FIG. 9.

The head is slowly turned as far as possible to the left or right with the chin drawn slightly in. (See Fig. 9.)

COMMANDS :

HEAD TO THE LEFT (OR RIGHT)—*turn*.HEAD FORWARD—*turn*.[*Common faults :*

Not holding the head erect.

Bending the head to one side.

Moving the shoulders.]

(iv) *Head Bending Sideways.*

FIG. 10.

The head is bent slowly sideways to the right or left without moving the shoulders. (See Fig. 10.)

COMMANDS :

HEAD TO THE RIGHT (LEFT)—*bend.*

HEAD UPWARD—*stretch.*]

[*Common faults :*

Raising one shoulder.

Turning the head.]

(b) EXERCISES AND POSITIONS OF THE FEET AND LEGS.

(i) *Feet Closing and Opening. (Feet Close Position.)*

The toes are raised slightly and moved inward so that the feet are brought together and touch along their inner borders. The body must be kept straight and the knees must not be bent during the movement. (See Figs. 6 and 11.)

COMMANDS :

FEET—*close.*

FEET—*open.*

[*Common faults :*

Moving the body.

Dragging the feet on the ground.

Not closing the feet completely.]

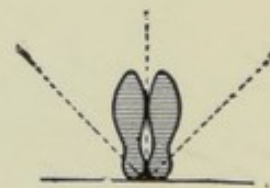


FIG. 11.

11) The Middle Position (Foot Forward Position)

The left foot is placed vertically in the middle of the middle line, and the right foot is placed at an equal distance to the right. The weight of the body is equally divided between the two feet, and the knees are straight. The second step, with the right foot, may be slightly advanced. (See Fig. 11)

The return movement will be made with the left foot.

Comments:

Keep the feet close together.

Keep the feet close together.

Comments:

Keep the feet close together.

Keep the feet close together.

Keep the feet close together.

Keep the feet close together.

Keep the feet close together.

12) The Middle Position (Foot Forward Position)



Fig. 12

Comments:

Keep the feet close together.

Keep the feet close together.



FIG. 10

The foot is bent slightly upwards in the right or left without moving the shoulder. (See Fig. 10.)

Comments:

This is the most important
exercise of the foot.

Directions:

Stand on the feet
Tense the foot.

(5) Exercises and positions of the feet and legs

(A) Feet Closed and Opening. (Feet Close Position.)

The feet are raised slightly and moved inward so that the feet are brought together and touch their inner borders. The body must be kept straight and the knees must not be bent during the movement. (See Figs. 6 and 11.)

Comments:

This is
the most

Directions:

Stand on the feet.
Draw up the feet on the ground.
The knees are not to bend.



FIG. 11

(ii) *Feet Astride Placing.* (*Feet Astride Position.*)

The left foot is placed one foot's length to the left of the middle line, and the right foot is then moved an equal distance to the right. The weight of the body must be equally divided between the two feet, and the knees must be straight. The second step, with the right foot, may be slightly marked. (See Fig. 12.)

The return movement also begins with the left foot.

COMMANDS :

FEET ASTRIDE—*place.*

FEET TOGETHER—*place.*

[*Common faults :*

Lifting feet too high or stamping.

Moving them unequal distances and altering angle of feet.

Swaying the body sideways in taking the position.]

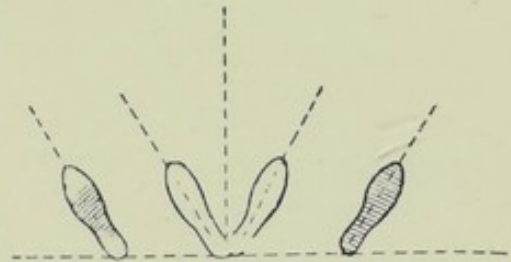


FIG. 12.

(iii) *Foot Placing Sideways.* (*Foot Sideways Place Position.*)

FIG. 13.

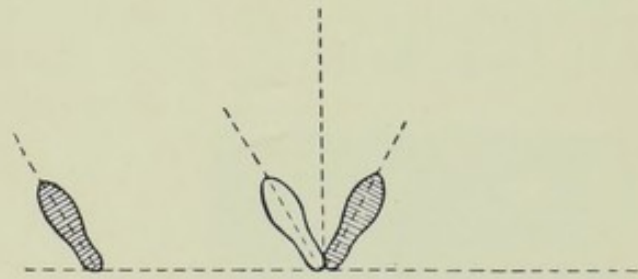


FIG. 14.

The foot is moved about two foot-lengths to the side, being kept parallel with its original position. The weight of the body should rest equally on both feet and the knees should be kept straight. The ultimate position is identical with the "Feet astride" position. (See Figs. 13 and 14.)

COMMANDS :

LEFT (OR RIGHT) FOOT SIDEWAYS—*place.*

RECOVER—*place.* (RECOVER.)

[Certain exercises, such as Foot placing outward, Toe support placing outward, and Lunging outward, should be taken from the standing position with the feet at an angle of 90 degrees rather than an angle of 60 degrees. (See Fig. 15.)

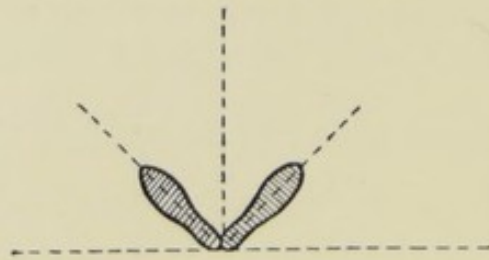


FIG. 15.

COMMAND :

FEET FULL—*open*.

This command should be given before the exercise itself is commanded. The exercises of Foot placing forward, Toe support placing forward, and Lunging forward may also be taken from the feet "Full open" position.]

(iv) *Foot Placing Outward*. (*Foot Outward Place Position*.)

The foot is placed outward about two foot lengths in the direction in which the toe is pointing when standing with the feet "Full open." The weight of the body must be equally divided between the two feet. (See Figs. 16 and 17.)



FIG. 16.

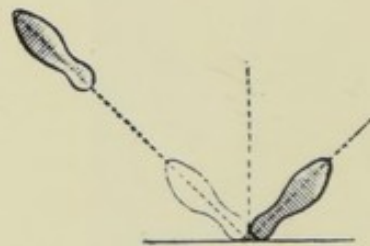


FIG. 17.

In Foot placing outward (or forward) the knee of the moving leg should be slightly bent, and the toe should meet the ground first. In the return movement, the heel is raised and the ankle stretched before the foot is brought back.

1870
The first year of the year 1870
was a year of great prosperity
and the people were very happy.

The second year of the year 1870
was a year of great prosperity
and the people were very happy.

The third year of the year 1870
was a year of great prosperity
and the people were very happy.

The fourth year of the year 1870
was a year of great prosperity
and the people were very happy.



lightly outward, and the feet pointing outward. The support
placing forward, and jumping outward, should be taken from the
starting position with the feet at an angle of 90 degrees rather
than an angle of 45 degrees. (See Figs. 15.)



FIG. 15.

CONCENTRATION

Foot Exercises.

This movement should be given before the starting drill is
commenced. The exercises of feet pointing forward, the support
placing forward, and Lumping forward may also be taken from the
"feet" "fall open" position.

20. Feet Pointing Outward. (Foot Clapped Feet Exercise.)

The feet are placed outward about two foot lengths in the
direction in which the toe is pointing when standing with the
feet "fall open." The weight of the body must be equally
divided between the two feet. (See Figs. 16 and 17.)



FIG. 16.



FIG. 17.

In Feet pointing outward, as in
ward the base of the starting leg
should be slightly bent, and the toe
should meet the ground first. In the
return movement, the feet are raised
and the ankle flexed before the
feet is brought back.

COMMANDS :

FEET FULL—*open*.LEFT (OR RIGHT) FOOT OUTWARD—*place*.RECOVER—*place* (OR, RECOVER).

[Common faults :

Bending the knee of the back leg as the foot is moved.

Resting too much of the body weight on the back leg.

Moving the shoulder with the foot.

Dragging the foot in returning to position.]

(v) *Foot Placing Forward. (Foot Forward Place Position.)*

The foot is moved about two foot-lengths straight forward and placed parallel to its original position with the feet "Full open" or "Open." The weight of the body must be equally divided between the two feet, and the knees must be straight. (See Figs. 18, 19, and 20.)

COMMANDS :

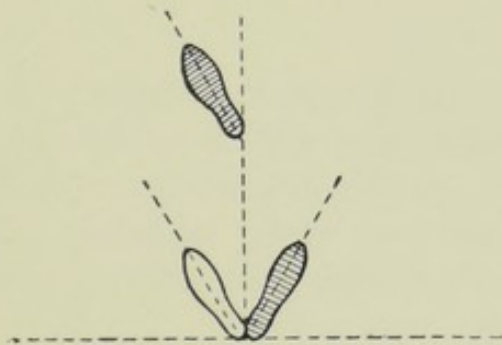
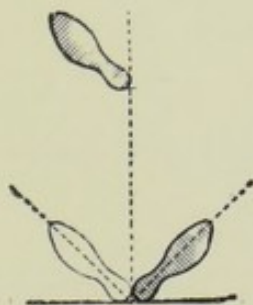
[FEET FULL—*open*.]LEFT (OR RIGHT) FOOT FORWARD—*place*.RECOVER—*place*.FIG. 19.
(60 degrees.)FIG. 20.
(90 degrees.)

FIG. 18.

(vi) *Toe Support Placing (Outward, Forward, or Sideways).*

FIG. 21.

These three positions correspond with the "Foot placings." The *toe*, however, alone rests on the ground, the heel being raised and the foot and ankle stretched. (See Figs. 21 and 22.) The weight of the body rests on the stationary foot.*

COMMANDS :

FEET FULL—*open.*

RIGHT FOOT OUTWARD
(FORWARD OR SIDEWAYS)
ON THE TOE—*place.*

RECOVER—*place.* (RECOVER.)



FIG. 22.

(vii) *Toe Support Placing Backward.*

FIG. 23.

The foot is moved directly backward about two foot lengths, the toe is placed on the ground and the knee and ankle are well stretched. The weight of the body rests on the forward foot. (See Fig. 23.)

COMMANDS :

RIGHT FOOT BACKWARD ON THE TOE—*place.*

RECOVER—*place.*

[*Common fault :*

Not stretching knee and ankle sufficiently.]

* The "Toe support placings" serve as preliminary movements for teaching dancing steps.

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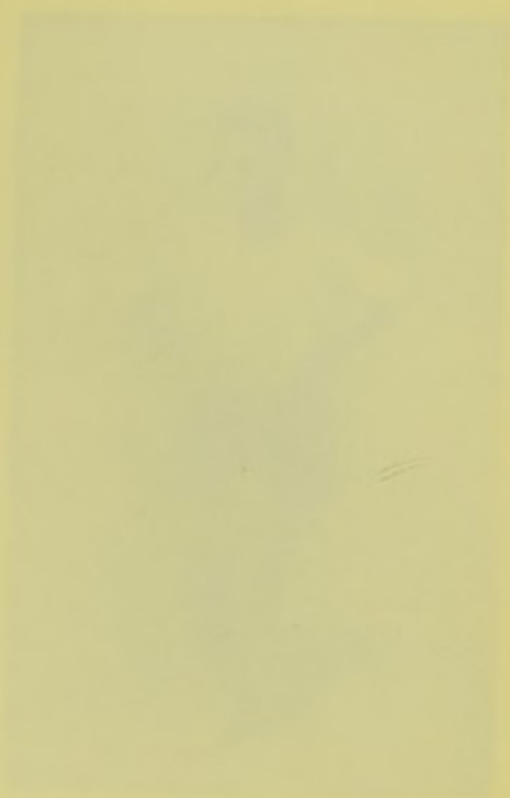


Fig. 1

Fig. 2



Fig. 3

Fig. 4

The Support of the Foot in Forward

When the foot is in contact with the ground, the weight of the body is supported by the foot and ankle. The weight of the body is supported by the foot and ankle. The weight of the body is supported by the foot and ankle.



Fig. 21

Fig. 22

The Support of the Foot in Forward

The foot is supported by the ground. The weight of the body is supported by the foot and ankle. The weight of the body is supported by the foot and ankle. The weight of the body is supported by the foot and ankle.



Fig. 23

The support of the foot is shown in the illustration. The weight of the body is supported by the foot and ankle. The weight of the body is supported by the foot and ankle.

(viii) *Lunging (Outward and Forward).*

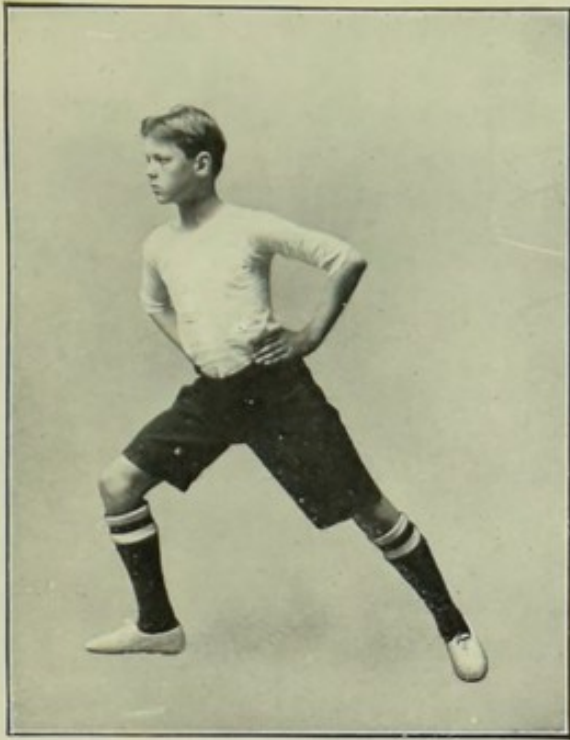
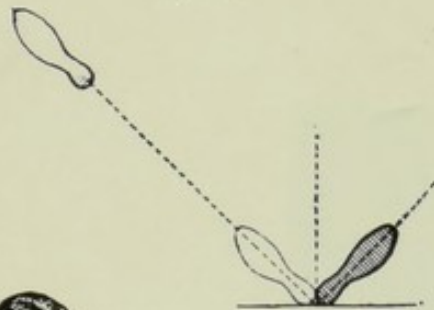


FIG. 24.



FIG. 27.



OUTWARD LUNGE (90 degrees.)

FIG. 26.



FIG. 25.

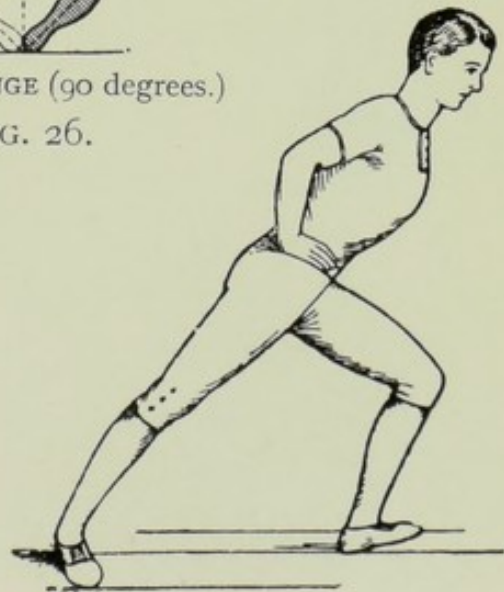


FIG. 28.

In lunging outward (or forward) the foot is moved about *three* foot-lengths in the same direction which is taken in "Foot placing outward" (or forward). The front knee must be well bent and the back leg must be kept perfectly straight, the foot remaining flat on the ground; most of the weight falls on the front leg. The body and head are inclined in line with the back leg, and should maintain the same relative position as at "Attention." In lunging outward (see Figs. 24, 25, and 26), the forward shoulder is slightly lowered, while in lunging forward (see Figs. 27, 28, 29, and 30), both shoulders remain level.

COMMANDS :

FEET FULL—*open.*

RIGHT FOOT OUTWARD (OR FORWARD) IN LUNGE
POSITION—*place.*

RECOVER—*place.*

[*Common faults :*

Not moving the foot far enough, or moving it too far.

Turning the forward knee in.

Moving the backward foot.

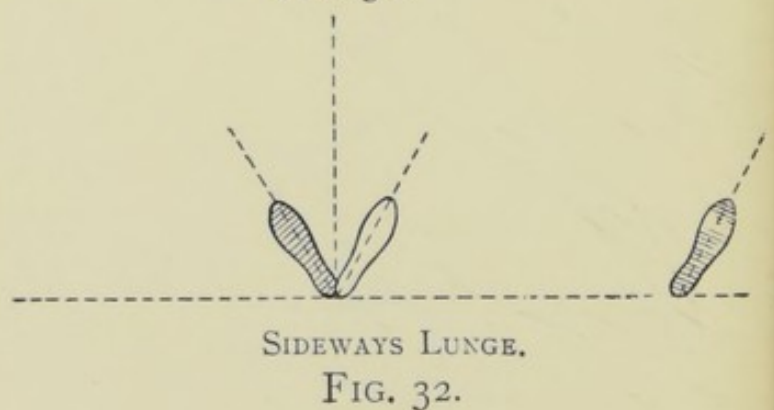
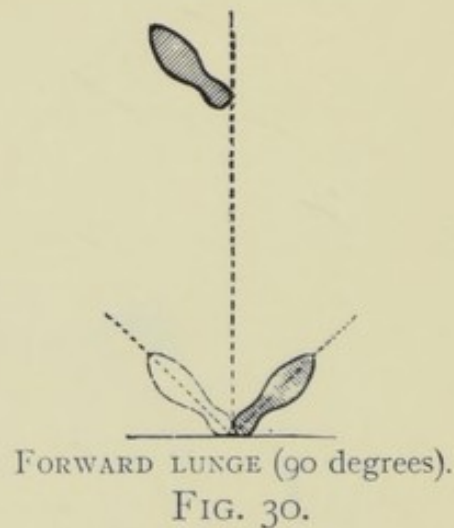
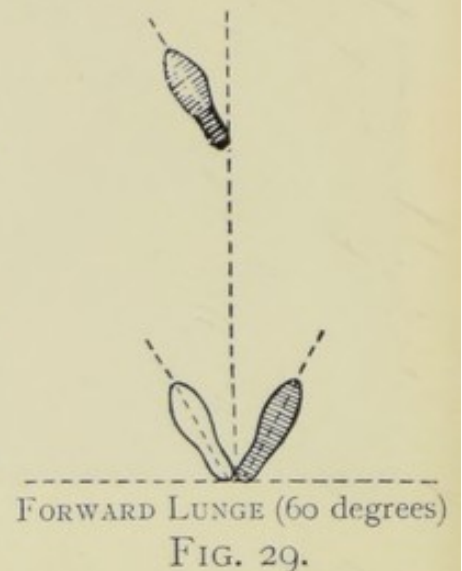
Not inclining the body correctly or bending the hip of the backward leg.

Bending the backward knee.]

(ix) *Lunging Sideways.*



FIG. 31.



The feet is moved at the same foot length to the side, or the distance taken is "Foot length" whatever. The corresponding time is kept and the body is returned and kept in line with the straight line. (See Figs. 11, 12). The relative bending of the trunk, and, in this bending, is the performance effect of the exercise, it is perhaps better to consider this exercise as a "Trunk bending sideways" rather than as a leg exercise.

Comments:

1. This exercise is a good conditioning exercise for the trunk.

2. TRUNK BENDING BACKWARD AND FORWARD.

(1) Trunk Bending Backward.

In this movement, the chest is kept about with the upper part of the spine is then bent backward. The feet remain in the same position, and it is not backward until the feet. The bending should at first be only slight, and it may be gradually increased until the exercise has been done. It may be easily explained that the body should be bent backward from the waist. The hands should be kept straight outwards. (See Figs. 13, 14)



FIG. 13

Comments:

1. This exercise is a good conditioning exercise for the trunk.

2. Trunk Bending Forward.

In this movement, the chest is kept about with the upper part of the spine is then bent forward. The feet remain in the same position, and it is not forward until the feet. The bending should at first be only slight, and it may be gradually increased until the exercise has been done. It may be easily explained that the body should be bent forward from the waist. The hands should be kept straight outwards. (See Figs. 15, 16)



FIG. 14

In lunging outward the front leg is moved about three times its length in the forward direction which is taken in "Pass placing forward" or forward. The front knee must be well bent and the back leg must be kept perfectly straight, the hind remaining stationary and the front leg bent at the knee. The weight of the body must fall on the front leg. The hind and front legs must be in line with the front leg, and should remain in the same relative position as in "Attention". In lunging outward (see Figs. 24, 25, and 26), the forward shoulder is slightly straight or slightly bowed out (see Fig. 27, 28, and 29), the hind shoulder remains level.

Caution:

- 1. Do not allow the horse to lean on the front leg.
- 2. Do not allow the horse to lean on the hind leg.
- 3. Do not allow the horse to lean on the neck.
- 4. Do not allow the horse to lean on the tail.

Caution for the rider:

- 1. Do not allow the horse to lean on the front leg.
- 2. Do not allow the horse to lean on the hind leg.
- 3. Do not allow the horse to lean on the neck.
- 4. Do not allow the horse to lean on the tail.



FIG. 24

Caution for the rider:



FIG. 25



FIG. 26



FIG. 27

The foot is moved about three foot-lengths to the side in the direction taken in "Foot placing sideways." The corresponding knee is bent and the body is inclined and kept in line with the straight leg. (See Figs. 31, 32.) This entails a bending of the trunk, and, as this bending is the predominant effect of the exercise, it is perhaps better to consider this exercise as a "Trunk bending sideways" rather than as a leg movement.

COMMANDS :

LEFT FOOT SIDWAYS IN LUNGE POSITION—*place*.

RECOVER—*place*.

2.—TRUNK BENDING BACKWARD AND FORWARD.

(i) *Trunk Bending Backward.*

In this movement the chest is first raised and the *upper* part of the spine is then bent backward. The head makes but little separate movement, and is carried backward with the body. The bending should at first be only slight, but it may be gradually somewhat increased as the exercise becomes familiar. It must be clearly understood that the body should not be bent backward from the *waist*. The breath must not be held during this exercise. (See Figs. 33, 34.)



FIG. 33.

COMMANDS :

TRUNK BACKWARD—*bend*.

TRUNK UPWARD—*stretch*.

[*Common faults :*

Bending the knees.

Carrying the head forward or backward.

Bending the lower part of the spine.

Holding the breath.]



FIG. 34.

(ii) *Trunk Bending Forward.*

The body is inclined slowly forward from the hips, with the chest raised. The back must be kept straight and must not be rounded. The head should not hang down but must be directed slightly upwards. The knees must be straight. (See Fig. 35.)

COMMANDS :

TRUNK FORWARD—*bend.*
TRUNK UPWARD—*stretch.*

[*Common faults:*

Bending the knees.
Hanging the head down.
Rounding the back.]



FIG. 35.

(iii) *Trunk Bending Forward and Downward.*

FIG. 36.

This is a continuation of "Trunk bending forward." The body is first inclined forward and then downward as far as possible. The knees must be kept straight and the back should not be unduly rounded. (See Fig. 36.)

COMMANDS :

TRUNK FORWARD AND DOWNWARD
—*bend.*
TRUNK FORWARD AND UPWARD
—*stretch.*

ORTHODONTIC AND STATIONING

The first step in the treatment of the patient is to determine the nature and extent of the malocclusion. This should be done by the orthodontist and the patient should be given a full explanation of the treatment.

Causes:
The causes of malocclusion are many and varied. They may be due to heredity, to local factors, or to a combination of the two.

Diagnosis:
The diagnosis of malocclusion is made by a careful examination of the teeth and the jaws. The orthodontist should also take a full history of the patient's dental treatment.

The "normal" position of the teeth is the position in which they are found in the jaws. This position is determined by the position of the jaws and the position of the teeth in the jaws. The normal position of the teeth is the position in which they are found in the jaws.



Fig. 1

(a) The Normal Position of the Teeth in the Jaws

The normal position of the teeth in the jaws is the position in which they are found in the jaws.



Fig. 2

The normal position of the teeth in the jaws is the position in which they are found in the jaws. This position is determined by the position of the jaws and the position of the teeth in the jaws. The normal position of the teeth is the position in which they are found in the jaws.

Causes:
The causes of malocclusion are many and varied. They may be due to heredity, to local factors, or to a combination of the two.

Diagnosis:
The diagnosis of malocclusion is made by a careful examination of the teeth and the jaws. The orthodontist should also take a full history of the patient's dental treatment.

(4) Trunk Bending Forward

The body is inclined slightly forward from the P. M. with the chest raised. The legs must be kept straight and must not be raised. The head should not swing down but must be directed slightly upwards. The arms must be straight (See Fig. 24)

Crucial Points

- 1. The chest must be raised.
- 2. The head must be directed upwards.

Common Faults

- 1. The chest is not raised.
- 2. The head is directed downwards.
- 3. The arms are not straight.



(5) Trunk Bending Forward and Downward



This is a combination of (4) Trunk bending forward. The body is bent forward and down. The legs must be kept straight and the head should not be raised. (See Fig. 25)

Crucial Points

- 1. The chest must be raised.
- 2. The head must be directed downwards.

FIG. 25

3.—ARM BENDING AND STRETCHING.

(i) *Arm Bending Upward.* (*Upward Bend Position.*)

The arms are bent upward at the elbow and the fingers placed on the outer side of the shoulders. The elbows must be kept close to the side and the fingers should be slightly bent. (See Fig. 37.)

COMMANDS :

ARMS UPWARD—*bend.*

ARMS DOWNWARD—*stretch.*

[*Common faults :*

Raising or moving the shoulders.

Moving the elbows away from the side.

Allowing the hands to come in front of the chest.]

The "Upward bend" position is the preliminary or commencing position for "Arm stretchings," which are always taken in two distinct movements, the arms being first bent and then stretched in the given direction, sideways, upward, forward, downward, or backward.



FIG. 37.

(ii) *Arm Stretching Sideways.* (*Sideways Stretch Position.*)

The arms are bent and then fully stretched horizontally sideways in line with the shoulders. The fingers and thumbs must be straight and close together and the palms turned down. (See Fig. 38.) In the return movement the arms are first bent and then stretched downward to the position of Attention.



FIG. 38.

COMMANDS :

ARMS SIDeways—*stretch.*

ARMS DOWNWARD—*stretch.*

[*Common faults :*

Allowing the shoulders to take too much part in the movement.

Allowing the head to fall forward.

Not stretching the arms and hands fully.

Separating the fingers.

Not keeping the body erect.]

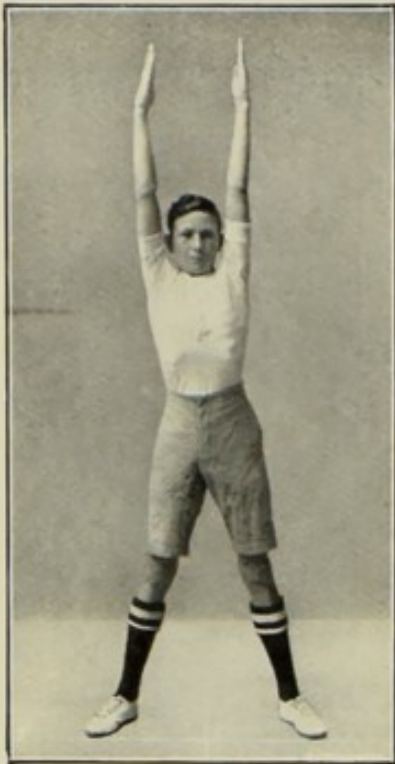
(iii) *Arm Stretching Upward. (Upward Stretch Position.)*

FIG. 39.

The arms are bent and then stretched upward to their fullest extent, the hands being the width of the shoulders apart, the fingers and thumbs straight and close together, and the palms turned in. The hands should be in line with the arms. (See Figs. 39 and 40.)

COMMANDS :

ARMS UPWARD—*stretch.*ARMS DOWNWARD—*stretch.*[*Common faults :*

Hands not in line with the arms.

Hands and arms brought too far forward.

Head carried forward.]

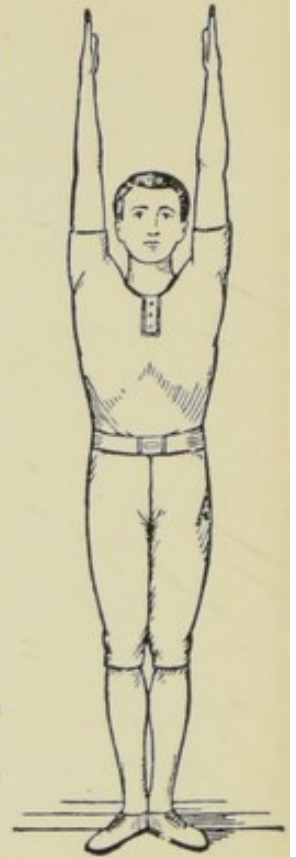


FIG. 40.

(iv) *Arm Stretching Forward. (Forward Stretch Position.)*

The arms are bent and then stretched forward at the shoulder level, keeping the body erect. The fingers and thumbs must be straight, the palms turned in, and the hands and arms should be at least the width of the shoulders apart. (See Fig. 41.)

COMMANDS :

ARMS FORWARD—*stretch.*ARMS DOWNWARD—*stretch.*[*Common faults :*

Bringing the shoulders forward.

Bringing the hands too close to one another.

Rounding the back.]



FIG. 41.

The first of these is the fact that the patient is usually a young man, and that the disease is usually of a chronic nature.



The second of these is the fact that the disease is usually of a chronic nature, and that the patient is usually a young man.

The third of these is the fact that the disease is usually of a chronic nature, and that the patient is usually a young man.



The fourth of these is the fact that the disease is usually of a chronic nature, and that the patient is usually a young man.

(iii) Arm Stretching Upward. (Upward Stretch Position)



Fig. 39.

The arms are bent and then stretched upward to their fullest extent, the hands being the width of the shoulders apart, the fingers and thumbs straight and close together, and the palms turned in. The hands should be in line with the arms. (See Figs. 39 and 40.)

Contra-indications:

- Acute rheumatism.
- Acute osteoarthritis.

[Common faults:]

- Hands not in line with the arms.
- Hands not close together.
- Head tilted forward.



Fig. 40.

(iv) Arm Stretching Forward. (Forward Stretch Position)

The arms are bent and then stretched forward at the shoulder level, keeping the body erect. The fingers and thumbs must be straight, the palms turned in, and the hands and arms should be at least the width of the shoulders apart. (See Fig. 41.)

Contra-indications:

- Acute rheumatism.
- Acute osteoarthritis.

[Common faults:]

- Dragging the shoulders forward.
- Dragging the hands backward to the ankles.
- Roundness of the back.



Fig. 41.

(v) *Arm Stretching Backward.* (*Backward Stretch Position.*)

The arms are bent and then stretched backward, the fingers and thumbs being straight, and the palms turned in. (See Fig. 42.)

COMMANDS :

ARMS BACKWARD—*stretch.*

ARMS DOWNWARD—*stretch.*

[*Common faults :*

Hollowing the back.

Bringing the shoulders and body forward.]



FIG. 42.

4.—BALANCE EXERCISES.

(i) *Heel Raising.** (*Heels Raise Position.*)

FIG. 43.

The heels are kept together and slowly raised as high as possible from the ground. The knees must be straight and the body erect. (See Fig. 43.)

COMMANDS :

HEELS—*raise.*

HEELS—*lower.*

[*Common faults :*

Swaying the body.

Allowing the heels to come apart.

Raising the shoulders during the movement.]

* This is a balance exercise for young children only. When familiar it may be classed among the leg exercises.

(ii) *Heel Raising and Knee Bending.*

FIG. 44.

The heels are first raised, and the knees are then bent half-way outwards, the heels being kept together. The head and body must be kept erect throughout the movement. (See Fig. 44.)

COMMANDS :

HEELS—*raise*. KNEES—*bend*.

KNEES—*stretch*. HEELS—*lower*.

[Common faults (in bending the Knees) :

Swaying the body, or inclining it forward.

Lowering the heels and not turning the knees sufficiently outward.

(In stretching the Knees)

Raising the shoulders.

Raising the heels too little.]

(iii) *Heel Raising and Knee Full Bending.**

FIG. 45.



FIG. 46.

This is a continuation of the preceding movement, the knees being bent as far as possible. The heels should be kept together. The head and body must be erect. (See Figs. 45 and 46.)

COMMANDS :

HEELS—*raise*. KNEES FULL—*bend*.

KNEES—*stretch*. HEELS—*lower*.

* See foot-note page 41.



The first of these was the
 establishment of the
 first government in
 the year 1776. This was
 the year when the
 Declaration of Independence
 was signed. The second
 was the establishment of
 the first constitution in
 the year 1787. This was
 the year when the
 Constitution was signed.
 The third was the
 establishment of the
 first federal government in
 the year 1789. This was
 the year when the
 first Congress met.
 The fourth was the
 establishment of the
 first executive branch in
 the year 1793. This was
 the year when George
 Washington became
 the first President.
 The fifth was the
 establishment of the
 first judicial branch in
 the year 1789. This was
 the year when John
 Jay became the first
 Chief Justice.



The sixth was the
 establishment of the
 first military branch in
 the year 1789. This was
 the year when the
 first Army was
 established. The seventh
 was the establishment of
 the first navy in the
 year 1794. This was
 the year when the
 first Navy was
 established. The eighth
 was the establishment of
 the first foreign relations
 in the year 1789. This
 was the year when the
 first Secretary of State
 was appointed. The
 ninth was the
 establishment of the
 first foreign relations
 in the year 1789. This
 was the year when the
 first Secretary of State
 was appointed. The
 tenth was the
 establishment of the
 first foreign relations
 in the year 1789. This
 was the year when the
 first Secretary of State
 was appointed.

(iii) Head Position and Knee Bending.



FIG. 44

The heels are feet raised, and the knees are then bent well away outwards, the feet being kept together. The head and body must be kept erect throughout the movement. (See Fig. 43.)

Comments:

- Heels—must be raised.
- Knees—well bent.

(iv) Head Position and Knee Full Bending.

- Heels—must be raised.
- Knees—well bent.
- Head—must be erect.
- Body—must be erect.
- Feet—must be flat.
- Back—must be erect.
- Neck—must be erect.
- Head—must be erect.

(v) Head Position and Knee Full Bending.*



FIG. 45



FIG. 46

This is a continuation of the preceding movement, the knees being bent as far as possible. The heels should be kept together. The head and body must be erect. (See Figs. 45 and 46.)

Comments:

- Heels—must be raised.
- Knees—well bent.

* See also Fig. 43.

(iv) *Knee Raising (Knee Raise Position).*

The knee is raised slowly upward until the thigh is at right angles to the body, the leg at right angles to the thigh, and the toe pointing downward. The standing leg must be kept perfectly straight and the body must be erect. (See Figs. 47 and 48.)

COMMANDS :

LEFT (OR RIGHT) KNEE—
raise.
KNEE—*lower.*

[*Common faults :*

Inclining the body backward or sideways.
Bending the knee of the standing leg.
Turning the raised knee or point of toe inwards.
Bending the knee or hip joint too little.]



FIG. 47.



FIG. 48.

(v) *Leg Raising Forward.*

FIG. 49.

The leg is raised forward as high as possible with a straight knee and pointed toe. The body must be kept erect. (See Fig. 49.) The same position may be reached by Leg stretching forward from the "Knee raise" position.

COMMANDS :

LEFT (OR RIGHT) LEG FORWARD—
raise.
LEG—*lower.*

[*Common faults :*

Bending the raised leg.
Raising the leg insufficiently.
Inclining or swaying the body.]

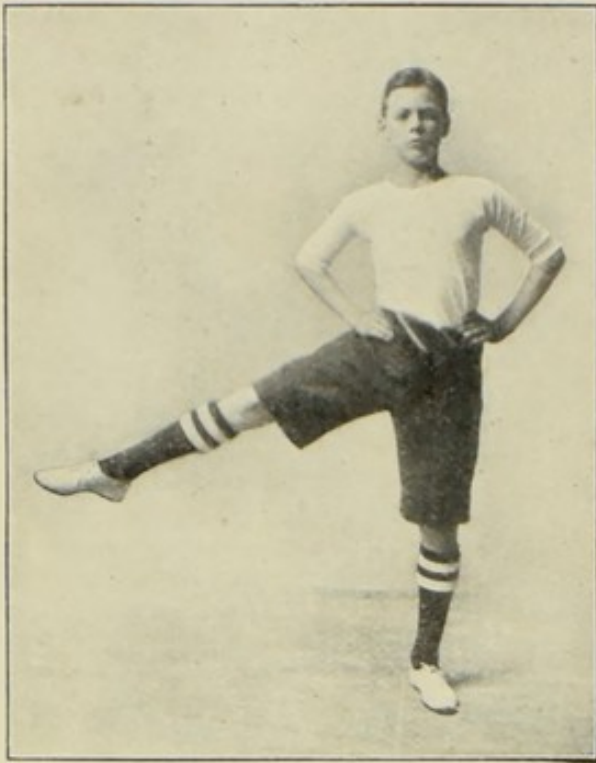
(vi) *Leg Raising Sideways.*

FIG. 50.

The leg is raised sideways with a straight knee and pointed toe. The body must be kept upright and must not be inclined towards the side of the standing leg. (See Fig. 50.)

COMMANDS :

LEFT (OR RIGHT) LEG SIDWAYS—
raise.

LEG—*lower.*

[*Common faults :*

Inclining the body.

Bringing the raised leg forward.]

(vii) *Leg Raising Backward.*

The leg is raised backward with a straight knee and pointed toe, the body being kept erect. (See Fig. 51.)

COMMANDS :

LEFT (OR RIGHT) LEG BACKWARD—
raise.

LEG—*lower.*

(Leg raising, forward, sideways or backward, may be taught especially to young children from the Toe support placing positions).



FIG. 51.

THE SCIENCE OF POSTURE

By Dr. J. M. H. [Name obscured]

The spine is bent at the neck, forward and inward, and held in a horizontal position across the chest. The head, neck, and shoulders should all be kept in line.

The shoulders must not be raised, and the elbows must be drawn back, keeping the hands well apart. (See Figs. 1 and 2.) This position is also known as the "Forward Head" position.

Characteristics

- 1. The head is tilted forward.
- 2. The neck is curved.

Common Faults

- 1. Raising the shoulders.
- 2. Drooping the shoulders.
- 3. Raising the head too high.
- 4. Drooping the head too low.



Fig. 1. "Forward Head" position.

(See text)



Fig. 2.

The head is tilted forward and inward, and held in a horizontal position across the chest. The head, neck, and shoulders should all be kept in line. The shoulders must not be raised, and the elbows must be drawn back, keeping the hands well apart. (See Figs. 1 and 2.) This position is also known as the "Forward Head" position.

Characteristics

- 1. The head is tilted forward.
- 2. The neck is curved.

Common Faults

- 1. Raising the shoulders.
- 2. Drooping the shoulders.
- 3. Raising the head too high.
- 4. Drooping the head too low.

(vi) Leg Raising Sideways



FIG. 30

The leg is raised sideways with a straight knee and pointed toe. The body may be kept upright and must not be inclined towards the side of the standing leg. (See Fig. 30.)

Comments:

- 1. The leg must not dip downwards.
- 2. The knee must not be bent.
- 3. The toe must be pointed.

Common faults:

- 1. Keeping the knee bent.
- 2. Keeping the leg curved.

(vii) Leg Raising Backward

The leg is raised backward with a straight knee and pointed toe, the body being kept erect. (See Fig. 31.)

Comments:

- 1. The leg must not dip downwards.
- 2. The knee must not be bent.
- 3. The toe must be pointed.

Leg raising forward, sideways or backward, may be taught especially to young children from the Toe-tapping standing position.



FIG. 31

5.—SHOULDER BLADE EXERCISES.

(i) *Arm Bending Across. (Across Bend Position.)*

The arms are bent at the elbow, forward and inward, and raised to a horizontal position across the chest. The hands, wrist, and forearm should all be kept in line. The shoulders must not be raised, and the elbows must be drawn back, bringing the hands well apart. (See Figs. 52 and 53.) (This position is also known as the "Forward bend" position.)

COMMANDS :

ARMS ACROSS (OR FORWARD)—*bend*.
ATTENTION.

[*Common faults :*

Raising the shoulders.
Bringing the elbows too far forward.
Lowering the elbows or allowing them to come forward.
Bringing the hands too near together.]



FIG. 53. View from above.



FIG. 52.

(ii) *Neck Rest.*

FIG. 54.

Without moving the head or body the hands are placed at the back of the neck with the wrists straight and the finger tips just meeting. The elbows must be well drawn back, the chest raised, and the head kept erect. (See Fig. 54.)

COMMANDS :

NECK—*rest*.
ATTENTION.

[*Common faults :*

Not keeping the head and elbows well back.
Bending the wrists.
Not keeping the body erect.]

(iii) *Arm Raising Sideways. (Sideways Raise Position.)*

The arms are kept quite straight and raised slowly sideways until they reach in one movement the "Sideways stretch" position. (See Fig. 38.) In the return movement they are gradually lowered in one movement, without bending, to the position of Attention.

COMMANDS :

ARMS SIDEWAYS—*raise.*
ARMS DOWNWARD—*lower.*

[*Common faults :*

Separating the fingers.
Moving the shoulders too much.]

(iv) *Arm Raising Forward. (Forward Raise Position.)*

The arms are kept straight and raised slowly forward until they reach in *one* movement the "Forward stretch" position. (See Fig. 41.) In the return movement they are gradually lowered to the position of Attention.

COMMANDS :

ARMS FORWARD—*raise.*
ARMS DOWNWARD—*lower.*

[*Common faults :*

Bringing the hands too close to one another.]

(v) *Arm Raising Sideways and Upward.*

The arms are kept straight and raised slowly sideways and upward until they reach in one movement the "Upward stretch" position. (See Figs. 39 and 40.) When the arms reach the "Sideways raise" position, the palms are turned upward as the arms are being raised, and downward as they are being lowered.

COMMANDS :

ARMS SIDEWAYS AND UPWARD—*raise.*
ARMS SIDEWAYS AND DOWNWARD—*lower.*

[*Common faults :*

Not raising the arms and hands to the vertical position.
Allowing the head to fall forward.
Bending the back at the waist.]

(vi) *Arm Raising Forward and Upward.*

The arms are raised slowly forward and then upward until they reach in one movement the "Upward stretch" position.

COMMANDS :

ARMS FORWARD AND UPWARD—*raise.*
ARMS FORWARD AND DOWNWARD—*lower.*

101) Arm Position

This may be taken from the "Forward arm position". The arm is held slightly extended and the "Forearm" is parallel to the ground being, however, directed towards the feet.

Comments:

The arm is held in a position which is slightly above the horizontal line.

102) The hand and fingers are held in a position which is slightly above the horizontal line.

103) Arm position may also be taken from "Forearm" and "Forearm" in Forward and in other positions. The arm is held in a position which is slightly above the horizontal line.

Comments:

The arm is held in a position which is slightly above the horizontal line.



Fig. 10

104) Arm Position

This is a more advanced position than the "Arm" position. The arm is held in a position which is slightly above the horizontal line.

Comments:

The arm is held in a position which is slightly above the horizontal line.

105) Arm Position

This may be taken from the "Forward arm position". The arm is held in a position which is slightly above the horizontal line.

(11) Arms Raising Sideways (Sideways Arms Position)

The arms are kept straight and raised slowly sideways until they reach in one movement the "Sideways Arms" position. (See Fig. 38.) In the return movement they are gradually lowered in one movement, without bending, to the position of Attention.

Comments:

- Arms straight - side.
- Arms raised slowly.

Common faults:

- Swinging the legs.
- Noting the shoulder and neck.

(12) Arms Raising Forward (Forward Arms Position)

The arms are kept straight and raised slowly forward until they reach in one movement the "Forward Arms" position. (See Fig. 39.) In the return movement they are gradually lowered to the position of Attention.

Comments:

- Arms straight - side.
- Arms raised slowly.

Common faults:

- Bringing the hands too close to the body.

(13) Arms Raising Sideways and Upward

The arms are kept straight and raised slowly sideways and upward until they reach in one movement the "Upward Arms" position. (See Figs. 40 and 41.) When the arms reach the "Upward Arms" position, the palms are turned upward as the arms are being raised, and downward as they are being lowered.

Comments:

- Arms straight - side.
- Arms raised slowly.

Common faults:

- Swinging the legs and hands to the correct position.
- Noting the head to be lowered.
- Noting the back of the neck.

(14) Arms Raising Forward and Upward

The arms are raised slowly forward and then upward until they reach in one movement the "Upward Arms" position.

Comments:

- Arms straight - side.
- Arms raised slowly.

(vii) *Arm Parting.*

This may be taken (a) from the "Forward raise position." The arms are slowly separated and take the "Sideways raise" position, the palms being, however, directed *forward* instead of downward. (See Fig. 55.)

COMMANDS :

ARMS FORWARD—*raise.*

ARM PARTING BY NUMBERS—1, 2.

ARMS DOWNWARD—*lower.*

(On 1, the arms are separated; on 2, they take the "Forward raise" position.)

(b) Arm parting may also be taken from "Sideways and upward (or Forward and upward) raise," the arms being lowered sideways to the shoulder-line with the palms turned up.

COMMANDS :

ARMS SIDWAYS AND UPWARD—*raise.*

ARM PARTING BY NUMBERS—1, 2.

ARMS SIDWAYS AND DOWNWARD—*lower.*



FIG. 55.

(viii) *Arm Flinging.*

This is a quick movement, and is best taken from the "Across bend" position. The arms are rapidly moved outward into the "Sideways raise" (or stretch) position. (See Fig. 38, p. 39.)

COMMANDS :

ARMS ACROSS—*bend.*

ARMS—*fling.*

ARMS—*bend.*

ATTENTION.

(ix) *Arm Swinging Sideways.*

This may be taken from the "Forward raise position." The arms are quickly separated and take the "Sideways raise" position, turning the palms down during the movement.

COMMANDS :

- ARMS FORWARD—*raise*.
 ARMS SIDeways—*swing*.
 ARMS FORWARD—*swing*.
 ARMS DOWNWARD—*lower*.

[Common faults :

- Moving the head or body during the exercise.
 Raising the shoulders.]

Arm swinging forward and sideways, or forward and downward, or downward and backward, can also be taken from "Arms forward and upward raise" (or "sideways and upward raise").

(x) *Arm Swinging Forward and Sideways.*

The arms swing forward and then sideways in one movement, the palms being turned down when the "Forward raise" position is reached.

COMMANDS :

- ARMS FORWARD AND UPWARD—*raise*.
 ARMS FORWARD AND SIDeways—*swing*.
 ARMS FORWARD AND UPWARD—*swing*.
 ARMS FORWARD AND DOWNWARD—*lower*.

(xi) *Arm Swinging Forward and Downward.*

The arms swing quickly forward and downward from "Arms forward and upward raise" into the position of "Attention."

(xii) *Arm Swinging Downward and Backward.*

This is really a continuation of the preceding movement, the arms swinging through the position of "Attention" into the "Backward stretch" position.

COMMANDS :

- ARMS FORWARD AND UPWARD—*raise*.
 ARMS FORWARD AND DOWNWARD (OR DOWNWARD AND BACKWARD)—*swing*.
 ARMS FORWARD AND UPWARD—*swing*.
 ARMS FORWARD AND DOWNWARD—*lower*.

6.—TRUNK TURNING AND BENDING SIDeways.

(i) *Trunk Turning.*

The body is turned slowly as far as possible without moving the legs to the left or right, the head and arms making no separate movement, but keeping their relative position to the shoulders.

Both sides must be washed in water with hands just used for work
thoroughly on the ground. (See page 10)



at least once a day

The following are the names of the
officers and men who were
killed in the battle of
Gettysburg, July 1-3, 1863.

...
...
...
...

...
...
...

...
...
...
...

(b) ...

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...
...

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...
...
...
...

(c) ...

...
...
...

(d) ...

...
...
...

...

...
...
...
...

STRAIGHT TURNING AND BENDING SIDeways

(a) ...

...
...
...
...

Both knees must be quite straight and both feet must be kept firmly on the ground. (See Fig. 56.)

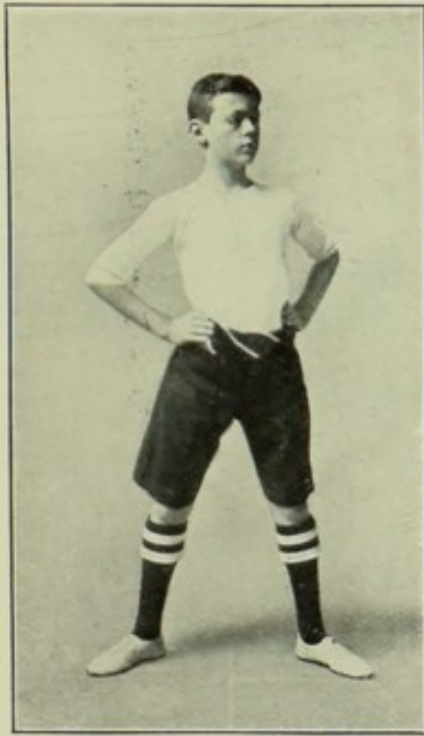


FIG. 56.

COMMANDS :

TRUNK TO THE
LEFT (OR RIGHT)
—*turn*.

TRUNK FORWARD
—*turn*.

[*Common faults :*

Moving the feet.
Twisting from
the knees.
Twisting the head
or arms.
Bending the
body.]



FIG. 57.

(ii) *Trunk Bending Sideways.*



FIG. 58.

The body is bent slowly to the left or right as far as possible without altering the position of the legs. The shoulders must be square to front, the knees must be kept straight, and both feet kept firmly on the ground throughout the exercise. The head makes no separate movement. (See Figs. 57 and 58.)

COMMANDS :

TRUNK TO THE LEFT (OR RIGHT)—*bend*.
TRUNK UPWARD—*stretch*.

[*Common faults :*

Bending the knee on the side to which the
body is bent.
Raising the heel of the other foot.
Turning the body or inclining it backwards
or forwards.]

CHAPTER IV.

MARCHING, RUNNING, JUMPING, AND BREATHING EXERCISES.

I.—MARCHING.

In marching, the head and body must be kept erect, and the arms should swing easily from the shoulders. The movement of the legs should come from the hips, and be free and natural. The foot should be carried straight forward and placed firmly on the ground.

Marching is commenced with the *left* foot, the first step being marked.

COMMANDS :

FORWARD [OR QUICK]—*march, (left, right).* CLASS—*halt, 1, 2.*

(On 1, a marching step is taken with the left foot; on 2, the right foot is brought forward to the position of Attention with a marked step.)

TURNING ABOUT ON THE MARCH.

The class turn to the Right about on the toes when the left foot is in front and the right foot behind. After the turn the left foot will be behind and the right foot in front; the left foot then takes a step forward, so completing the movement, and marching is continued, beginning with the right foot. In order to turn to the Left about, the positions of the feet must be reversed.

COMMAND :

RIGHT ABOUT—*turn, 1, 2, 3, 4.*

(On 1 and 2, ordinary marching steps are taken; on 3, the turn is made on the toes, to the right about; on 4, the left foot is brought forward.)

With young children the second and fourth steps may be slightly marked, this gives rhythm and makes the movement somewhat easier.

WHEELING.

When marching in single file, the leader changes his direction to the right (or left), moving round the circumference of a quarter circle whose radius is about 3 feet, the other children acting in a similar way when they arrive at the same point.

COMMAND :

RIGHT (OR LEFT)—*wheel.*

If the class is marching in fours or eights, the children on the inner side (that is, the *right* side when wheeling to the *right*,) have a shorter distance to take than those on the outer side. The steps

and accordingly the subject on the lower side taking
short steps, while those on the lower side take comparatively long
steps with the change of direction was being made.

MANIPULATION OF THE FEET

This movement may be taken advantage of to give security to
the ordinary march, or to avoid obstacles, or to avoid a fall
etc.

CAUTION

When a soldier is marching up a
slope, or is a short step from the
top of the slope, he should be
careful not to take a long step
with the forward foot, as he
will be liable to fall. He should
take short steps, and should
keep his feet close together.

These movements may be performed
conveniently with the right and left foot
of a step march, the same in this case
being taken on the same. (See Fig. 90.)

CAUTION

When a soldier is marching up a
slope, or is a short step from the
top of the slope, he should be
careful not to take a long step
with the forward foot, as he
will be liable to fall. He should
take short steps, and should
keep his feet close together.



Fig. 90

MANIPULATION OF THE FEET

The feet are raised as high as possible, and the body is
swayed forward. Each step should be taken with the
same amount of force.

CAUTION

When a soldier is marching up a
slope, or is a short step from the
top of the slope, he should be
careful not to take a long step
with the forward foot, as he
will be liable to fall. He should
take short steps, and should
keep his feet close together.

When a soldier is marching up a
slope, or is a short step from the
top of the slope, he should be
careful not to take a long step
with the forward foot, as he
will be liable to fall. He should
take short steps, and should
keep his feet close together.

When a soldier is marching up a
slope, or is a short step from the
top of the slope, he should be
careful not to take a long step
with the forward foot, as he
will be liable to fall. He should
take short steps, and should
keep his feet close together.

The feet are raised as high as possible, and the body is
swayed forward. Each step should be taken with the
same amount of force.

When a soldier is marching up a
slope, or is a short step from the
top of the slope, he should be
careful not to take a long step
with the forward foot, as he
will be liable to fall. He should
take short steps, and should
keep his feet close together.

CHAPTER IV.

MARCHING, RUNNING, JUMPING AND BREATHING EXERCISES.

I.—MARCHING.

In marching, the head and body must be kept erect, and the arms should swing easily from the shoulders. The movement of the legs should come from the hip-joint in a regular natural gait. The foot should be carried straight forward and placed evenly on the ground.

Marching is commenced with the left foot, the first step being marked.

Counting.

Marchers in a class march in steps, as follows:

On 1, the marching step is taken with the left foot, and on the next foot is brought forward in the position of Attention with a marked step.

THE TURN TO THE RIGHT AND TO THE LEFT.

The class turn to the right about on the toes when the left foot is in front and the right foot behind. After the turn the left foot will be behind and the right foot in front; the left foot then takes a step forward, so completing the movement, and marching is continued, beginning with the right foot. In order to turn to the left about, the positions of the feet must be reversed.

Counting.

March 1 2 3 4 5 6 7 8 9 10

On 1 and 3, ordinary marching steps are taken; on 2, the turn is made on the toes to the right about; on 4, the left foot is brought forward.

With young children the second and fourth steps may be slightly marked, this gives direction and makes the movement somewhat easier.

REVERSING.

When marching in single file, the leader changes his direction to the right (or left) by turning round the circumference of a square circle whose radius is about 2 feet, the other children acting in a similar way when they arrive at the same point.

Counting.

March 1 2 3 4 5 6 7 8 9 10

If the class is marching in lines or regiments, the children on the inner side (that is, the right side when marching to the right) march a greater distance to take their first step on the outer side. The steps

must accordingly be regulated, the children on the inner side taking short ones, while those on the outer side take comparatively long ones until the change of direction has been completed.

CHANGING STEP ON THE MARCH.

This movement may be taken occasionally to give variety to the ordinary march, or to correct individual children who are "out of step."

COMMAND :

CHANGE—*step*, 1, 2, 3.

(On 1, an ordinary marching step is taken; on 2, a short step which brings the instep of the rear foot up to the heel of the forward foot; on 3, an ordinary marching step is taken with the *forward* foot. Thus on 1 and 3 the same foot moves forward.)

These movements may be performed consecutively with the right and left foot as a step march, the steps in this case being taken on the toes. (See Fig. 59.)

COMMAND :

WITH CHANGE OF STEP, FORWARD—*march*,
1, 2, 3.



FIG. 59.

MARCHING ON THE TOES.

The heels are raised as high as possible, and the steps are somewhat shortened. Each step should be light, the arms swinging easily.

COMMANDS :

HEELS—*raise*. FORWARD—*march*.

CLASS—*halt*, 1, 2, 3.

(On 1, a step is taken with the left foot on the toe; on 2, the right foot is brought up to the left; and on 3, the heels are lowered to the position of Attention.)

In changing from ordinary marching the command is :

HEELS—*raise*.

The first step on the toes is taken as the left foot moves forward after the command *march*.

In changing from marching on the toes to ordinary marching, a marked step should be made with the left foot after the command Heels—*lower* has been given.

MARKING TIME WITH KNEE RAISING.

Beginning with the left leg, the knees are raised alternately from the ground until the thigh forms a right angle with the body, the toes being pointed downward. In raising the leg the foot should not be carried forward in advance of the knee.

COMMANDS :

WITH KNEE RAISING, MARK—*time* (left, right).

CLASS—*halt*, 1, 2.

MARCHING WITH KNEE RAISING.

The knees are raised alternately until the thigh is at right angles to the body with the toe pointing downward, and the class move forward rather more slowly than in ordinary marching.

COMMANDS :

WITH KNEE RAISING, FORWARD—*march*.

or, taken from ordinary marching :

KNEES —*raise*.

The knee raising is commenced as the first complete step is made after the command *march* has been given.

HOP MARCHES.

Hop March with Knee Raising.—A step forward is taken with the left foot. The right foot is then raised, with the knee turned slightly out and the toe pointed, while a hop is made on the left foot. The same movements are then repeated, beginning with the right foot. The body should be slightly inclined towards the side of the raised knee. (See Fig. 60.)



COMMANDS :

HOP MARCH, WITH KNEE RAISING—*begin*.

CLASS—*halt*, 1, 2.

(On 1, the raised foot takes an ordinary step forward; on 2, the other foot is brought to "Attention" with a slightly marked step.)

FIG. 60.

Step 2. Head and Leg raised. The right leg is raised and stretched forward with a straight knee and pointed toes, the left leg being kept over.

Comments:

The right leg is raised and stretched forward with a straight knee and pointed toes, the left leg being kept over.

Step 3. Head and Leg raised. The right leg is raised and stretched forward with a straight knee and pointed toes, the left leg being kept over. The right leg is then raised backward while a hop is made on the left foot. The arms are raised, beginning with the right arm. The body is shifted forward and slightly to the left, over the forward foot. (See Fig. 50.)



Comments:

The right leg is raised and stretched forward with a straight knee and pointed toes, the left leg being kept over.

In this position the body is kept in the "High toe" position as in Fig. 50. "Lunge on toes."

HEAD AND LEGS

The head and legs are raised and stretched forward with a straight knee and pointed toes, the left leg being kept over. The right leg is then raised backward while a hop is made on the left foot. The arms are raised, beginning with the right arm. The body is shifted forward and slightly to the left, over the forward foot. (See Fig. 50.)

Comments:

The right leg is raised and stretched forward with a straight knee and pointed toes, the left leg being kept over.

Marching with rifle raised.

Beginning with the rifle leg, the knee is raised vertically from the ground until the shaft forms a right angle with the foot, the foot being pointed forward. In raising the leg the foot should not be carried backward or ahead of the knee.

Comments:

- 1. The knee is raised vertically.
- 2. The foot is pointed forward.

Marching with rifle raised.

The knee is raised alternately with the right and left legs. The right leg is raised with the foot pointed forward and the knee above the foot. The left leg is raised with the foot pointed forward and the knee above the foot.

Comments:

- 1. The knee is raised vertically.
- 2. The foot is pointed forward.
- 3. The knee is above the foot.

The knee is raised vertically and the foot is pointed forward. The knee is above the foot and the foot is pointed forward.

Step forward.

The Marching Step Forward - A step forward is taken with the left foot. The right foot is then raised, with the knee turned slightly out and the toe pointed, while a step is taken on the left foot. The same movements are then repeated, beginning with the right foot. The foot should be slightly inclined towards the side of the raised foot. (See Fig. 10.)



Fig. 10.

Comments:

- 1. The knee is raised vertically.
- 2. The foot is pointed forward.

When the raised foot takes an ordinary step forward, on a, the other foot is raised a little "outstep" with a slightly inclined toe.

Hop March with Leg Raised Forward.—During the hop the raised leg is stretched forward with a straight knee and pointed toe, the body being kept *erect*.

COMMANDS :

HOP MARCH WITH LEG RAISING FORWARD—*begin*.

CLASS—*halt*, 1, 2.

Hop March with Leg raised Backward.—A step forward is taken with the left foot. The right leg is then raised backward while a hop is made on the left foot. The same movements are repeated, beginning with the right foot. The body is *inclined* forward and slightly to one side, over the forward foot. (See Fig. 61.)



FIG. 61.

COMMANDS :

HOP MARCH WITH LEG RAISED BACKWARD—*begin*.

CLASS—*halt*, 1, 2.

In hop marches the hands may be placed in the "Hips firm" position or, as in Fig. 60, "Hands on hips."

II.—RUNNING.

The heels are first raised and running is commenced with the left foot, the steps, which are taken on the toes, being as light as possible. The arms are slightly bent, the fists loosely clenched and the backs of the hands turned outward. The arms must not be kept rigid, but should swing freely and easily from the shoulders with the movements of the body. The shoulders should be kept steady and square to the front. The foot must be carried straight forward after leaving the ground. While running the body is inclined slightly forward.

COMMANDS :

FORWARD—*run*.

CLASS—*halt*, 1, 2, 3, 4.

(On 1, 2, and 3, the steps become gradually slower; on 4, the rear foot is brought to "Attention" with a marked step.)

In changing from running to ordinary marching the command is :

CHANGE—*march*, 1, 2, 3, 4.

(The steps become gradually slower on 1, 2, 3, and 4, and after 4, marching is at once continued, the left foot beginning with a marked step.)

RUNNING WITH KNEE RAISING.

With each step the knee is raised until the thigh forms a right angle with the body, the toe pointing downward. The body must be kept *erect*, and the running is taken with shortened steps.

COMMANDS :

WITH KNEE RAISING, FORWARD—*run*.

CLASS—*halt*, 1, 2, 3, 4.

Running with knee raising should as a rule only be continued for eight or ten consecutive steps. It is often taken during running, the commands being :—

KNEES—*raise*.

CHANGE—*run*.

RUNNING ON THE SPOT.

This is a variation of the preceding movement. It is taken in a similar way, but instead of moving forward, the class remain stationary.

COMMANDS :

RUNNING ON THE SPOT, LEFT (RIGHT) FOOT—*begin*.

CLASS—*halt*, 1, 2, 3, 4.

III.—JUMPING.

A jump consists of three parts in addition to the preliminary run which is frequently used—(1) the start or "take off," (2) the actual jump, and (3) the landing.

The *take off* should be taken from the fore part of one or both feet, and consists of a quick bending of the hip, knee, and ankle, followed by an immediate straightening of these joints.

The *jump* itself begins as the feet leave the ground, and finishes directly they touch it, when the knees should be nearly straight, the heels together, and the feet stretched downwards. The legs should, however, be free from all stiffness.

In landing the legs are bent at the knees and the feet
brought under the body. This is done by drawing the
feet towards the middle of the body. The
jump is completed by landing on the feet.

For the first jump the feet are bent at the knees
with the toes brought in under the body. The
landing is taken quietly and the feet are bent
again.

The following may be taken as a guide:

1. *Active Jumping*—This is done by jumping
after the feet have been raised.

Exercise

1. *Active Jumping*
2. *Active Jumping*

On 1, the feet are fully bent at the knees and
on 2, the feet are quickly brought together
and raised.

3. *Active Jumping*—The children jump
stretching the feet and legs to the air and
as light as possible.

Exercise

1. *Active Jumping*
2. *Active Jumping*

On 1 and 2, the feet are fully bent and the
on 3 and 4, the feet are brought together
and the body is raised.

The jumping is done by drawing the feet
towards the middle of the body.

Exercise

1. *Active Jumping*
2. *Active Jumping*

On 1, the feet are fully bent and the
on 2, the feet are brought together
and the body is raised.

The jumping is done by drawing the feet
towards the middle of the body.

The jumping is done by drawing the feet
towards the middle of the body.

Exercise

1. *Active Jumping*
2. *Active Jumping*

On 1, the feet are fully bent and the
on 2, the feet are brought together
and the body is raised.

When a, and b, the upper hand of the body is raised, the
the body is raised to the level of the hand.

In changing from a standing to a walking position, the
hand is raised.

Diagram - see page 10

The body is raised gradually from a standing position
to a walking position, the hand being raised with a
rhythmic motion.

Walking with arms raised.

When walking with the arms raised, the hand should be
raised with the body, the low position of the hand
being maintained, and the raising of the hand being
done in a rhythmic motion.

Diagram - see page 10

Diagram - see page 10

Walking with arms raised should be a rhythmic motion,
the hand being raised with the body, the low position
of the hand being maintained, and the raising of the
hand being done in a rhythmic motion.

Diagram - see page 10

Walking with arms raised.

This is a variation of the walking position. It is
done in a similar way, but instead of moving forward,
the hand is raised and the body is raised.

Diagram - see page 10

Diagram - see page 10

10. JUMPING

A jump consists of three parts in addition to the preliminary
step which is frequently used - (1) the start or "take off," (2) the
flight or "air," and (3) the landing.

The start of a jump should be taken from the fore part of one or both
feet, and consists of a quick bending of the hip, knee, and ankle,
followed by an upward movement of these parts.

The flight of a jump begins as the feet leave the ground, and continues
until the feet touch the ground again. The body should be kept
straight, the arms raised, and the feet together, and the body
should descend in a free, easy manner.

In *landing* the toes must reach the ground first and the hip, knee, and ankle are at once quickly bent and then straightened. This prevents jarring of the spine or other part of the body. The jump is completed by lowering the heels to the ground.

(i) *Free standing jumps* taken from both feet are easily taught with the class arranged in open ranks. "Heel raising and Knee bending" taken quickly may be used as a preparation for such jumping.

The following may be taken as examples of suitable jumps:—

Astride Jumping.—This is taken from the standing position after the heels have been raised.

COMMANDS :

HEELS—*raise*.

ASTRIDE JUMPING—*begin*, 1, 2.

(On 1, the feet quickly take the Astride position on the toes; on 2, the feet are quickly brought together again, the heels being still raised.)

Upward Jump.—The children jump directly upward, fully stretching the body and legs in the air, and the landing should be as light as possible.

COMMANDS :

UPWARD—*jump*, 1, 2, (3, 4,) 5, 6.

(On 1 and 2, the heels are quickly raised and the knees are bent; on 3 and 4, the jump is taken; on 5 and 6, the knees are stretched and the heels lowered.)

The numbers may be omitted and the command should then be given as Upward jump—*go*.

[*Common faults* : (in jumping upward)

Bending the knees and inclining the body forward :

(in landing)

Keeping the ankle and knee joints stiff and the body not erect.]

Jumping Forward or Backward (or to the right or left) may be taken in a similar way.

The Upward jump may be combined with Turning to the right or left. During the jump a turn through a quarter circle is made so that on landing the child faces to the right or left.

COMMANDS :

WITH TURNING TO THE RIGHT (LEFT) UPWARD—*jump*, 1, 2, (3, 4,) 5, 6.

[*Common fault* :

Commencing to turn too soon.]

Free standing jumps such as the above may be combined with movements of the arms, such as Arm raising or Arm flinging.

For example :

COMMANDS :

WITH ARM FLINGING, UPWARD—*jump*, 1, 2, (3, 4) 5, 6.

The Arm flinging is performed with the jump on (3, 4) from the Across bend position of the arms.

Two consecutive jumps may be taken in the same direction.

For example :

COMMANDS :

TWICE UPWARD—*jump*, 1, 2, (3, 4) (5, 6) 7, 8.

(The jumps are taken on (3, 4) and (5, 6).)

(ii) *Jumping over a rope*.—This is commenced with a running start, beginning with the right or left foot, three, or five short steps being taken with increasing speed before the actual jump is made. The jump is taken from *one* foot, and the knees are bent well up in the upward spring and stretched out before landing. The landing is made on both feet as already described.

COMMANDS :

WITH THREE (FIVE) STEPS FORWARD OFF THE LEFT (RIGHT) FOOT—*go*.

It is not necessary to give this command to each child, the words Next—*go* being sufficient.

Several variations may be introduced: (a) Two or more children may start simultaneously from the same or from opposite feet. They must keep in step and should land at the same moment. (b) Turning right or left during the jumps. The turn is made as the body is in the air, before landing. For turning to the *right*, the jump is taken from the *right* foot. A further advance on this exercise is to turn to the right (or left) *about*.

The "Standing jump over the rope" is taken from both feet as in "Upward jump," with no previous running start, but bending the knees to clear the rope.

(iii) *Long jumping*.—This is commenced with a running start usually somewhat longer than that required for jumping over a rope, and the jump is taken from one foot. The length of the jump may be marked out with chalk on the floor. Long jumping may also be combined with Turning or About turning.

The "Standing Long Jump" is done from a line on the ground. Each child jumps in turn and the place where his heels land is marked. After toeing the line the jumper rises as high as he can on his toes and stretches his arms above his head as high as possible with clenched fists. He pauses here a moment in full

balance the body in such a way that the head is held in a steady position and the body is held in a steady position.

HEALTHY EXERCISES

A healthy exercise is one which is beneficial to the body and mind. It should be such that it does not overtax the body and does not cause any undue strain. It should be such that it is enjoyable and does not cause any undue fatigue. It should be such that it is suitable for the age and sex of the person. It should be such that it is suitable for the climate and season. It should be such that it is suitable for the individual's own health and happiness.

The exercises should be such that they are suitable for the individual's own health and happiness. They should be such that they are suitable for the individual's own health and happiness. They should be such that they are suitable for the individual's own health and happiness.

The following may be taken as examples of Healthy Exercises:-

- 1. Arm raising exercise.
- 2. Leg raising exercise.
- 3. Neck raising exercise.
- 4. Head raising exercise.
- 5. Head lowering exercise.
- 6. Head turning exercise.
- 7. Head shaking exercise.
- 8. Head nodding exercise.
- 9. Head tilting exercise.
- 10. Head tilting exercise.

The exercises of the arms may be done in a standing position or in a sitting position. They may be done in a standing position or in a sitting position.

The exercises of the legs may be done in a standing position or in a sitting position. They may be done in a standing position or in a sitting position.

The exercises of the neck may be done in a standing position or in a sitting position. They may be done in a standing position or in a sitting position.

The exercises of the head may be done in a standing position or in a sitting position. They may be done in a standing position or in a sitting position.

Five standing jumps such as the above may be combined with movements of the arms, such as Arm raising or Arm flinging.

For example:

Command:

Five jumps—right—left—right—left—right.

The Arm flinging is performed with the jump on (1, 2) from the Across head position of the arms.

Two consecutive jumps may be taken in the same direction.

For example:

Command:

Two jumps—right—left—right—left—right.

(The jumps are taken on (1, 2) and (2, 1).)

Alt. Jumping over a rope.—This is commenced with a running start, beginning with the right or left foot, whichever is the jumping foot, with the jumping arm extended forward and upward, as usual. The jump is taken from one foot, and the knees are bent well up in the upward spring and extended well before landing. The landing is made on both feet as already described.

Command:

Run—take over—right—over—left—over—right—over—left—over—right.

It is not necessary to give this command to each child, the words being easily followed.

Several variations may be introduced: (a) Two or more children may start simultaneously from the same or from opposite feet. They may keep in step and should land at the same moment. (b) Turning right or left during the jumps. The turn is made as the body is in the air, before landing. For turning to the right, the jump is taken from the right foot. A further variety in this exercise is to turn to the right (or left) about.

The "Standing jump over the rope" is taken from both feet, as in "Upward jump," with no previous running start, but bending the knees as clear the rope.

Alt. Long jumping.—This is commenced with a running start, usually somewhat longer than that required for jumping over a rope, and the jump is taken from one foot. The length of the jump may be marked out with chalk on the floor. Long jumping may also be combined with Turning or About turning.

The "Standing Long Jump" is done from a line on the ground. Each child jumps on two feet and the place where his feet land is marked. After trying to do the longest jump as high as he can on his feet and sometimes his arms above his head as high as possible with clenched fists, he raises them a moment or two

balance, then inclines slowly forward, and in doing so quickly swings the body and arms forward and downward and bends the knees, then without a moment's pause throws his arms and body forward and upward, and springs.

IV.—BREATHING EXERCISES.

A Breathing Exercise consists of a combination of movements partly of the body muscles and partly of the lungs themselves, the first result of which is a deeper inspiration and a more complete expiration than occurs in ordinary breathing. Certain arm movements are among the simplest of these Breathing Exercises and may be accompanied by deep breathing, as this will bring into action additional muscles of respiration. It may be said that in a certain sense every physical exercise is a Breathing Exercise. The term "Breathing Exercise" is here restricted to certain definite movements of which the exercises described below may be taken as examples.

The rate of respiration varies with the individual, as well as in relation to age, and therefore the class should not necessarily be expected to perform these exercises in the same exact and regular time that is required with the other movements. The teacher should remember that a child naturally breathes more rapidly than an adult. As a rule, in school, Breathing Exercises should be taken in the standing position, and whenever possible these exercises should be preceded by "handkerchief drill" to ensure a free passage for the air through the nose.

The following may be taken as examples of Breathing Exercises:—

1. Arm raising sideways.

Arm parting.

Arm raising forward and upward, lowering sideways and downward.

Arm raising sideways and upward, lowering sideways and downward.

The movements of the arms may be combined with deep breathing, they must be slow and must correspond with inspiration and expiration.

For example:

With deep breathing, Arms sideways—*raise*.

Arms downward—*lower*.

The class breathe in as the hands are raised, and breathe out as they are lowered.

2. Simple Breathing Exercise (a) with Hands on chest.

The hands rest lightly on the lower part of the front of the chest with the finger tips two or three inches apart and directed inward (see Fig. 62). The child is thus able to feel the movements of the chest walls during breathing. The mouth must be kept closed during the exercise, and both inspiration and expiration should be deep and slow.

COMMANDS :

HANDS ON CHEST—*place.*
 BREATHE—*in.* BREATHE—*out.*
 [*Or, BREATHING—commence.*]
 ATTENTION.



FIG. 62.

(b) With Hips firm.

This exercise is taught in a similar way, the hands being in the Hips firm position, to take the weight of the arms off the shoulders.

HIPS—*firm.* BREATHE—*in.*
 BREATHE—*out.*
 ATTENTION.

(c) At Attention.

In this exercise the breathing is taken in the position of Attention.

In commanding Breathing Exercises care must be taken to give the executive words (*in, out, etc.*) smoothly and deliberately, so that children who breathe comparatively slowly shall not be unduly hurried, and those who naturally breathe more quickly shall not pause too long at the end of inspiration. Indeed, there is much to be said for substituting the command "Breathing—*commence*" for the double command "Breathe—*in, Breathe—out,*" thus allowing each child greater freedom in regard to the rate of breathing. Breathing exercises should not be done in regular time for the reason given on page 57.

Deep breathing should never be given immediately after vigorous exercise. If the children are "out of breath," the jumping or running should be followed by marching or marking time, and the breathing exercise should only be commenced when the class are again breathing quietly.

THE ARRANGEMENT OF THE CLASS ROOM.

CHAPTER I.

On the subject of the arrangement of the class room, there is one fact which is of great importance. It is that the teacher should be in the center of the room, the pupils on all sides.

When a class consists of more than twelve children, a window seat should be formed, about two feet beyond the front. In that case the class is not large to be arranged in a row, and where the available space is large and deep, the class may be divided into two divisions, as is shown in Fig. 1.

Young children may be placed in position, but with older children this is unnecessary. In the roomed "Auditorium" the teacher should immediately take the position of Attention. (See Fig. 1, p. 2.)

In arranging the desks, the children, with the exception of the boys on the extreme right of the class, have their backs to the front and face to their right. There are no desks with the backs to the front, and the desks with their backs to the front are placed in a row at the front. When this has been done, the desks are arranged as follows:

Diagram 1.

The room is 12 feet deep and 20 feet wide.

A class of 20 children may be arranged in two rows of ten children each, with a window seat for the boys on the right. The desks are arranged as follows: the desks with their backs to the front are placed in a row at the front, and the desks with their backs to the front are placed in a row at the back. The desks with their backs to the front are placed in a row at the front, and the desks with their backs to the front are placed in a row at the back.

Diagram 2.

The room is 12 feet deep and 20 feet wide.

Diagram 3.

Beginning with the left hand, the feet are raised alternately about two inches from the ground, the knees being slightly bent. The class should move forward or backward while marching.

It is found by some that the feet are raised about two inches from the ground, the knees being slightly bent. The class should move forward or backward while marching.

CHAPTER V.

THE ARRANGEMENTS OF THE CLASS (ORDER
MOVEMENTS).

FORMATION OF A CLASS.

On the command "Fall in" the children should take their places in one line arranged according to height. As a rule, the shortest should be on the left of the class, the tallest on the right.

When a class consists of more than twelve children a second line should be formed, about two feet behind the first. In cases where the class is too large to be formed up in two lines, or where the available space is broad and short, the class may be divided into two divisions, each arranged in two lines.

Young children may be placed in position, but with older children this is unnecessary. On the command "Attention," the children should immediately take the position of Attention. (See Figs. 1, 2, 3.)

To straighten the lines, the children, with the exception of the leader on the extreme right of the class, turn their heads to the right and move by short steps until they are in line with the leader and at regular distances from each other (about one hand's breadth at the elbow). When this has been done the heads are again turned to the front.

COMMANDS :

EYES RIGHT AND LINES—*straight*.

EYES—*front*.

A class is said to be in *ranks* when the children stand side by side; in *files* when they are one behind the other.* A rank is converted into a file by turning the class to the right or left, a file into a rank in a similar manner. In order to straighten the lines when the class is standing in files, the leader in each file stands still, while each of the other children places himself directly behind the one in front.

COMMAND :

CLASS—*cover*.

MARKING TIME.

Beginning with the left foot, the feet are raised alternately about two inches from the ground, the knees being slightly bent. The class should not move forward or backward while marking time.

* It should be noted that the term "file" is not used here in the strictly technical sense, in which it connotes two persons only, placed one behind the other.

COMMANDS :

MARK—*time* (left, right, &c.).

CLASS—*halt*, 1, 2.

(On 1, a marking time step is taken with the left foot; on 2, the right foot is brought to the position of Attention.)

TAKING DISTANCES.

a. In ranks. To take distance, the class mark time, and all except the leaders gradually move to the left, at the same time turning the head to the right; until, by raising the right arm sideways to the shoulder line (palm downwards), the finger tips touch the shoulder of the child on the right. The class then halt, the arms are lowered to the side and the heads turned to the front.

COMMANDS :

SINGLE DISTANCE FROM THE RIGHT—*take*.

CLASS—*halt*, 1, 2.

(On 1, a marking time step is taken with the left foot; on 2, the right arm and foot are brought back to the position of Attention.)

If less distance is required, the right hand is placed in the "Hips firm" position, and each child moves to the left until his right elbow touches the left arm of the child on the right.

COMMANDS :

ELBOW DISTANCE FROM THE RIGHT—*take*.

CLASS—*halt*, 1, 2.

b. In files. The class mark time, and, with the exception of the leaders, all move backwards, until, by raising the arms forward (palms inward), each child is able to touch the outside of the shoulders of the one in front with the tips of his fingers. The class then halts, and the position of Attention is resumed.

COMMANDS :

DISTANCE FORWARD—*take*.

CLASS—*halt*, 1, 2.

TURNING.

A Turning is a movement taken to change the direction in which the class faces.

In turning to the right, a quarter circle is turned on the right heel and left toe, raising the *left* heel and the *right* toe. To complete the movement, the left foot is brought to the position of attention beside the right foot with marked step. To turn to the left similar movements are made, raising the *right* heel and the *left* toe.

Comments:

March - forward, right, 800.

Class - halt, 1, 2.

(On 1, a marking time step is taken with the left foot; on 2, the right foot is brought to the position of Attention.)

turning distance.

a. *In parts.* To take distance, the class marks time, and all except the leaders gradually move to the left, at the same time turning the head to the right, until, by raising the right arm sideways to the shoulder line (palm downwards), the fingers just touch the shoulder of the child on the right. The class then halts, the arms are lowered to the side and the heads turned to the front.

Comments:

March - forward, right, 800.

Class - halt, 1, 2.

(On 1, a marking time step is taken with the left foot; on 2, the right arm and foot are brought back to the position of Attention.)

If less distance is required, the right hand is placed on the "hips arm" position, and each child moves to the left until his right elbow touches the left arm of the child on the right.

Comments:

March - forward, right, 800.

Class - halt, 1, 2.

b. *In file.* The class marks time, and, with the exception of the leaders, all move backwards, until, by raising the arms forward (palms inward), each child is able to touch the outside of the shoulder of the one in front with the tips of his fingers. The class then halts, and the position of Attention is assumed.

Comments:

March - forward, right, 800.

Class - halt, 1, 2.

turning.

A *Turning* is a movement taken to change the direction in which the class faces.

In turning to the right, a quarter circle is turned on the right heel and left toe, raising the left heel and the right toe. To complete the movement, the left foot is brought to the position of attention beside the right foot with marked step. To turn to the left similar movements are made, raising the right heel and the left toe.

COMMAND :

RIGHT (OR LEFT)—*turn*, 1, 2.

(On 1, the heel and toe are raised and the turn is made and the toe is lowered ; on 2, the rear foot is brought to Attention.)

In turning to the right (or left) about, the class turn a half circle in a similar way.

COMMAND :

RIGHT (OR LEFT) ABOUT—*turn*, 1, 2.

TURNING WHILE MARKING TIME.

Children may also be taught to turn while marking time, as this is a simpler way of taking the movement. The right or left turn may be taken in two movements, the about turn in four.

COMMANDS :

MARK—*time* (left, right).

LEFT—*turn*, 1, 2.

LEFT ABOUT—*turn*, 1, 2, 3, 4.

STEPPING FORWARD, BACKWARD OR SIDWAYS.

One, or two, steps forward or backward are taken, beginning with the left foot.

COMMAND :

ONE (TWO) STEP FORWARD (BACKWARD)—*march*, 1, 2.

(On 1, the left foot is placed forward ; on 2, the right foot is brought to the position of Attention.)

Stepping sideways is performed to the command :

ONE (TWO) STEP TO THE LEFT (RIGHT)—*march*, 1, 2.

NUMBERING, OPENING AND CLOSING RANKS.

In numbering in twos, the leader on the right numbers "one," the next child "two," the next "one," and this is continued down the line, each child turning the head quickly to the left when speaking, and to the front again immediately afterwards.

With older children the front rank only should number, each child in the rear rank taking the same number as the one directly in front of him.

With younger children both ranks may number separately.

COMMAND :

FROM THE RIGHT IN TWOS—*number*.

To open ranks after numbering, the front rank takes one (or two) steps forward, and the rear rank one (or two) steps backward. The "ones" then take a step forward and the "twos" a step backward, so forming four lines. Closing ranks is performed in the reverse order. (See FIG. 63.)

COMMANDS :

(To open ranks.)

FRONT RANK A STEP FORWARD, REAR RANK A STEP BACKWARD—*march.*

ONES (OR TWOS) A STEP FORWARD, TWOS (OR ONES) A STEP BACKWARD—*march.*

(To close ranks.)

ONES A STEP BACKWARD, TWOS A STEP FORWARD—*march.*

FRONT RANK A STEP BACKWARD, REAR RANK A STEP FORWARD—*march.*

For older children, say, above Standard II., the commands may be given as :

WITH ONE STEP OPEN (OR CLOSE) RANKS—*march.*

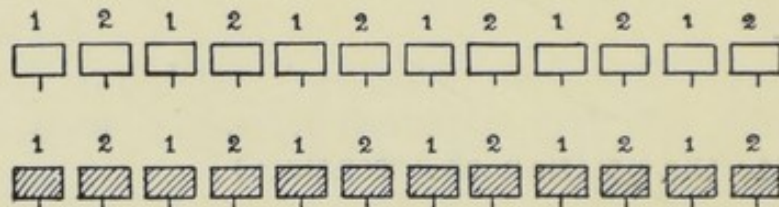
ONES AND TWOS OPEN (OR CLOSE) RANKS—*march.*

In Standards V., VI., and VII., the command may be given as :

CLASS, OPEN (OR CLOSE) RANKS—*march.*

After opening ranks a Turn to the right or left may be made if the teacher considers it desirable.

Class in two Ranks



Opened Out.

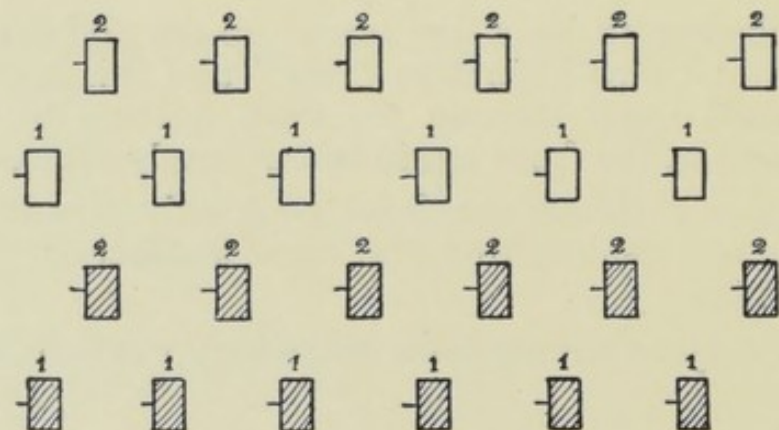


FIG. 63.

THE HISTORY OF THE UNITED STATES

When the children are seated at their desks, the teacher should lead them in a recitation of the lesson. The teacher should ask the children to read the lesson and to answer the questions.

The teacher should then ask the children to read the lesson and to answer the questions. The teacher should ask the children to read the lesson and to answer the questions.

CONSTRUCTION

THE HISTORY OF THE UNITED STATES

The teacher should ask the children to read the lesson and to answer the questions.

The teacher should ask the children to read the lesson and to answer the questions. The teacher should ask the children to read the lesson and to answer the questions.

CONSTRUCTION

The teacher should ask the children to read the lesson and to answer the questions.

The teacher should ask the children to read the lesson and to answer the questions.

In the upper standards the standards may be shortened, as well as the number of questions.

If the class is only large enough to have one line, the children should be divided into three groups of four. The teacher should ask the children to read the lesson and to answer the questions.

CONSTRUCTION

The teacher should ask the children to read the lesson and to answer the questions.

In the upper standards the standards may be shortened, as well as the number of questions.

CONSTRUCTION

The teacher should ask the children to read the lesson and to answer the questions.

THE HISTORY OF THE UNITED STATES

On the next lesson, the class should be divided into three groups of four.

To open ranks after marching, the front rank takes one or two steps forward, and the rest march out for two steps backward. The "ones" then take a step forward and the "twos" a step backward, so forming front line. Closing ranks is performed in the reverse order. (See Fig. 53)

Comments:

(To open ranks)

Turn with a step forward, step with a step backward, march

Close the front a step forward, then the rest with a step backward

(To close ranks)

Turn a step backward, with a step forward, march

Turn with a step forward, with a step backward, march

For older children, see above Method II, the same drill may be given as:

With one step forward, then a step backward, march

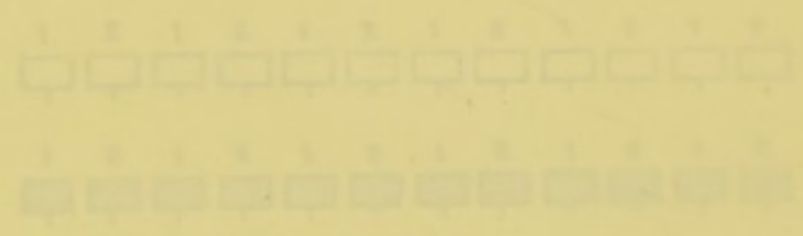
Close the front a step forward, then the rest with a step backward

In standards V, VI, and VII, the comments may be given as:

Close the front a step forward, march

After opening ranks a Turn to the right or left may be made if the teacher considers it desirable.

Class in two Ranks



Opened Out.



NUMBERING, OPENING AND CLOSING FILES.

When numbering with the class in files, the leader of the file on the right numbers "one," at the same time turning his head over his left shoulder. The numbering is continued down the line in a similar way.

To open files, the two files take two short steps away from one another, the "ones" then take one step to the right, the "twos" one step to the left.

COMMANDS:

(To open files).

WITH TWO STEPS, OPEN FILES—*march*.

ONES (OR TWOS) A STEP TO THE RIGHT, TWOS (OR ONES) A STEP TO THE LEFT—*march*.

(To close files).

ONES A STEP TO THE LEFT, TWOS A STEP TO THE RIGHT—*march*.

WITH TWO STEPS, CLOSE FILES—*march*.

In the upper standards the commands may be shortened, as with opening and closing ranks.

If the class is only large enough to form one line, the children number in threes instead of twos. To open ranks, the "ones" take a step forward, and the "threes" a step backward, while the "twos" stand still.

COMMAND:

ONES A STEP FORWARD, THREES A STEP BACKWARD—*march*.

In opening files, the ones and threes move to the right and left respectively.

COMMAND:

ONES (OR THREES) A STEP TO THE RIGHT, THREES (OR ONES) A STEP TO THE LEFT—*march*.

DISMISSING A CLASS.

On the word *Dismiss*, the class disperse quietly after a momentary pause.

CHAPTER VI.

ORDER AND PROGRESSION OF EXERCISES.

In drawing up a syllabus of exercises for a course of physical training lessons, there are certain fundamental principles which must always be kept in mind :—

(1) The exercises must be selected for their nutritive, corrective, or developmental effects on the body as a whole, and not merely to encourage the enlargement of certain muscles.

(2) The exercises must be adapted to the age, physical condition and general requirements of the pupils.

(3) They must be arranged on a certain, definite, systematic plan, each exercise having its special object in the lesson in order that the greatest effect may be obtained within the available time.

(4) The Physical Training must be above all things progressive, and this progression should be maintained throughout the entire period.

ORDER OF EXERCISES.

In order to carry out the above principles, the exercises derived from the positions described in Chapter III. must be classified in groups, and these groups must be arranged in a definite sequence according to some distinct and common-sense rule. As far as possible *each group should be represented in every lesson.*

A lesson may be shortened if necessary by the omission of any group or groups of exercises provided that a proper proportion of the easier and more difficult movements is maintained. There is less need for vigorous massive movements when the physical training lesson immediately follows a period of play, or when, as in a country school, the outdoor and home life of the children gives abundant opportunity for exercise of all kinds. Such movements are however of the first importance when the opportunities for games and out-door exercise are restricted, as is necessarily the case in most town schools.

In arranging the exercises in a lesson the easy general movements should come first, as these prepare the way for, or lead up to, the more difficult and specialised exercises, which, if taken in this order, are performed more easily and with a minimum of effort. At the end of the lesson should come the vigorous movements which bring all the muscles of the body into action.

Reading these reports should be the following arrangement of the various groups of exercises, and the order the practical exercises to be the most convenient.

1. Introductory and preliminary exercises.
2. Neck posture and exercises.
3. Arm posture and exercises.
4. Balance exercises.
5. Shoulder blade exercises.
6. Abdominal exercises.
7. Leg posture and exercises.
8. Posture, walking, and running exercises.
9. Footwear exercises.

It is suggested that exercises be arranged in the following order: (1) Neck posture, (2) Arm posture, (3) Shoulder blade posture, (4) Abdominal posture, (5) Leg posture, (6) Posture, walking, and running, (7) Footwear exercises.

The exercises should be arranged in the following order: (1) Neck posture, (2) Arm posture, (3) Shoulder blade posture, (4) Abdominal posture, (5) Leg posture, (6) Posture, walking, and running, (7) Footwear exercises.

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CHAPTER VI.

ORDER AND PROGRESSION OF EXERCISES.

In drawing up a syllabus of exercises for a course of physical training lessons, there are certain fundamental principles which should always be kept in mind:—

(1) The exercises must be selected for their educational character, and for their value as a means of developing the physical and mental powers of the pupils.

(2) The exercises must be adapted to the age, sex, and physical condition of the pupils.

(3) They must be arranged in a progressive order, so that the pupils may acquire the necessary skill and technique in each exercise before proceeding to a more difficult one.

(4) The Physical Training must be a part of the daily programme, and the progress should be carefully watched throughout the entire period.

ORDER OF EXERCISES.

In order to carry out the above principles, the exercises should be arranged in the order described in Chapter III, and should be divided into groups, and their progress should be arranged in a definite order, according to the nature of the exercises. As far as possible, each group should be completed in every lesson.

A lesson may be shortened if necessary by the omission of any group or groups of exercises, provided a proper and sufficient amount of exercise is maintained. There is, however, no objection to the omission of any group of exercises, provided a suitable substitute is made. In all cases, the exercises should be arranged in a progressive order, so that the pupils may acquire the necessary skill and technique in each exercise before proceeding to a more difficult one. The exercises should be arranged in a progressive order, so that the pupils may acquire the necessary skill and technique in each exercise before proceeding to a more difficult one.

In arranging the exercises in a lesson, the most general and simple exercises should come first, and the more difficult and specialized exercises should come last. The exercises should be arranged in a progressive order, so that the pupils may acquire the necessary skill and technique in each exercise before proceeding to a more difficult one.

Bearing these points in mind, the following arrangement of the various groups of exercises* will be found for practical purposes to be the most convenient :—

1. Introductory and breathing exercises.
2. Trunk bending backward and forward.
3. Arm bending and stretching.
4. Balance exercises.
5. Shoulder-blade exercises.
- [*Abdominal Exercises.*]
6. Trunk turning and bending sideways.
7. Marching, running, jumping (including games).
8. Breathing exercises.

I. INTRODUCTORY EXERCISES.—These are made up of two kinds of preliminary movements :—

(1) Order movements ; (2) Preparatory and corrective movements.

(1) The *Order* movements are those described in Chapter V., and are indispensable to the satisfactory class teaching of physical exercises. Younger children must of course be taught these movements, but as they become familiar they are performed more smartly and automatically, and then occupy a small portion of the lesson only. Their disciplinary value, however, remains.

(2) *Preparatory and corrective* movements pave the way for the more difficult exercises. There should usually be included among them a breathing exercise, a head movement, and a foot or leg movement. The latter may occasionally be replaced by a march if desired. These exercises must be easy or familiar to the children ; some movements may be taken as introductory exercises by elder children which have been previously taught in other groups in the lower classes. When a lesson is of short duration, and all groups cannot be included, it is permissible to teach any new movement in the Introductory group after the respiratory and corrective exercises.

Examples :—

Head bending backward or forward.

Foot placing sideways, outward, or forward.

Lunging outward or forward.

* This Skeleton Table represents the minimum number of exercises which can be said to constitute a complete Lesson. It is always possible to add to it. For example, two leg exercises (one of which may be marching) may be taken in the Introductory Group ; a leg exercise may precede the final Breathing exercises ; a Trunk bending forward, or forward and downward, may be given after the Balance exercises, etc. Such alterations should, however, only be made by an experienced teacher, and with due regard to the length of the lesson and its effect upon the pupil.

2. TRUNK BENDING BACKWARD AND FORWARD.—“Trunk bending backward” serves to widen the chest, to promote a freer movement of the ribs and to strengthen the muscles of the upper part of the body as well as the muscles of the body wall. It is thus most valuable in helping to produce good carriage, but as it is a comparatively severe exercise, it should not be taught to children under seven years of age. It should not be repeated too often, and care should be taken to see that the breath is not held during its performance.

“Trunk bending forward,” and “forward and downward,” are of special use in strengthening the muscles of the back, correcting round shoulders, and in rendering the body more supple.

Examples:—Trunk bending backward ; forward ; and forward and downward.

3. ARM BENDING AND STRETCHING.—Such movements also help in some degree to expand the chest, they strengthen the muscles of the arms and make the joints more flexible. They are easy exercises to perform, may be taught to quite young children and may be given freely, especially when it is desired to make the lesson simple and recreative. They can be used as “recreative” exercises in the class room, and every teacher should be familiar with them.

Examples:—Arm stretching sideways, upward, forward, or backward.

4. BALANCE EXERCISES.—The educational value of these exercises is extremely high. They serve to develop the brain centres, they assist in promoting the control of the brain over the muscles and body generally, and they help the child to acquire concentration of purpose. They bring into action and develop the muscles which hold the body erect, and so improve the general carriage, while at the same time they often have a corrective action if there is a tendency to stoop or to hold the head or shoulders badly. It must be noted that progression is particularly important in this group, for the reason that when a balance exercise has been learnt and is performed without difficulty, it ceases to be a “balance” exercise, and has little further value as such though it is still useful in other ways.

Examples:—Heel raising and Knee bending. Knee raising. Leg raising, forward, or backward.

5. SHOULDER-BLADE EXERCISES.—These must be carefully distinguished from Arm bendings and stretchings. Though the ultimate position in both groups may in some cases be identical, it is arrived at in a different manner, different combinations of muscles are often employed, and the effects of the movements are also dissimilar.

Shoulder exercises have a marked effect on the expansion of the chest, and at the same time they help to flatten the shoulder blades and to bring them into the correct position. Their corrective action is of great importance. Large numbers of children have round shoulders or unduly prominent shoulder blades and these exercises tend to counteract such defects.

Examples:—Arm parting. Arm swinging.

ABDOMINAL EXERCISES.—These exercises involve contraction of the muscles which form the body wall. This contraction helps to strengthen and give tone to the muscles, so assisting them to afford adequate support to the abdomen and its contents. They also help to prevent hollow back. The local circulation of the blood is at the same time stimulated and the physiological activity of the organs of digestion and excretion is thus increased.

Examples:—Lying, Leg raising; Prone falling.

As many abdominal exercises are taken in the sitting, kneeling, or lying positions they require a clean floor space. Their use is therefore necessarily restricted in elementary schools, though a few of the simpler ones may be used wherever the accommodation and other conditions are suitable. Some examples of these, in progressive order of difficulty, are given in Appendix A.

For obvious reasons abdominal exercises proper cannot take a place among the ordinary routine exercises taught in elementary schools. On this account the group has not been numbered with the others, and is only included, as a group, in the Tables for older children. Where abdominal exercises proper cannot be used, their place may be taken by some "step" marches, such as "Marching with Knee raising," or additional Trunk movements, such as "Trunk bending backward"; exercise of the muscles of the body wall is also obtained by Jumping and Ball games. These "auxiliary abdominal exercises" may find a place in every Table of exercises.

6. TRUNK TURNING OR BENDING SIDWAYS.—These exercises develop the lateral flexibility of the spine and its power of rotation. They tend to increase the capacity of the chest, especially in its lower part, and encourage the movements of the lower ribs. The muscles of the body wall are strengthened; and somewhat similar physiological effects are produced as by abdominal movements.

Examples:—Trunk turning. Trunk bending sideways.

7. MARCHING, RUNNING AND JUMPING.—Marching and running exert a considerable influence on the circulation, respiration,

digestion and excretion. The carriage of the body is improved and further control and co-ordination is given to the various muscle groups. These movements also have a valuable educational effect in producing alertness, ready response and a happy cheerful spirit. Jumping has a similar, but in some ways an even more pronounced effect.

8. BREATHING EXERCISES.—Breathing exercises may be introduced between any two exercises if it seems advisable; they can also be taken in the class-room. It is important to remember that much of their value is lost if they are performed in an impure atmosphere. The teacher must, for physical exercises, teach nasal breathing, both for inspiration and expiration. For the correct performance of breathing exercises it is essential that the clothing shall be loose. A common fault made in breathing, especially noticeable in women, is to use the upper part of the chest almost entirely and to neglect the lower part of the chest and the abdomen, and so, of course, the lower parts of the lungs. One of the reasons for doing breathing exercises is to counteract this tendency to partial expansion of the lungs, to teach the child to use the whole chest as well as the abdominal muscles, and especially to encourage the full expansion of the lower ribs. The teacher should therefore pay careful attention to the method of breathing and should watch that the children do not simulate full expansion by merely raising the shoulders and upper part of the chest.

Examples :—

Breathing with the "Hands on the chest" or in Hips firm.

Breathing with Arm raising sideways.

Breathing with Arm raising forward and parting.

PROGRESSION OF EXERCISES.

By "Progression" is understood a series of changes in an exercise, or in a Table of Exercises, which renders it gradually more difficult to perform, though more effectual in its results.

Progression of Exercises may be obtained in various ways :—

1. By altering the position of the feet and so making the "base" of a movement larger or smaller. For example, with the feet in the "Astride" position the body is more stable than when the feet are in the "Standing" position. Many exercises, though not all, are therefore most easily taught when the child stands with the "feet astride." The exercise may afterwards be taken from the standing position and later still from "Feet close." "Foot placings" outward or forward may also be used.

2. By altering the position of the arms and so altering the "balance" of the body as a whole. This balance is most easily

maintained when the arms are in the "High Arm" position. In the position of "Attention" the balance is good, but the hands are not fixed. By moving the arms into the "Upward hand," the "Across hand," the "Submarine stream," the "Forward stream," the "Back arm" and especially into the "Upward stream" positions, the general balance of the body is altered and the same exercise taken in each body these different starting positions become more difficult to perform correctly.

4. By altering the position of the body as well as of the arms. This can be done by progressing from the "Lunge" or "Trunk forward hand" into the "Trunk backward hand."

5. By taking an exercise more slowly. For example, *Arms raised to the sides* and *Arms forward* are comparatively easy exercises when taken moderately quickly, but they are difficult when taken slowly and deliberately.

6. By increasing the time during which the exercise is maintained. This may be done by repeating the exercise more slowly, for example, *Trunk Motion*, *Arms raised to the sides*, or by giving some additional movement of the arms, as in *Trunk backward* or *Trunk forward*. For example, *Trunk backward* with *Arms raised and opening*, or *Arms raised and opening* and *stretching*.

7. By a combination of exercises. The exercises may be done in a specific movement of the feet may be done, as in *Trunk backward* or *Trunk forward*, or as in *Trunk backward* with *Arms raised and opening*, or as in *Trunk backward* with *Arms raised and opening* and *stretching*. The exercises may be combined in two different positions, as in *Arms raised and opening* backward and *Arms raised and opening* forward, or *Arms raised and opening* backward and *Arms raised and opening* forward. It must always be remembered that the progression, in whichever way it is made, must be gradual, and that each step in progression must be learned before a new one is attempted.

A few words may be added as to progression in *Trunk Motion*.

Progression in Trunk Exercise.—*Trunk backward* exercises backward are most easily performed with the feet in the "Trunk backward" position, with the arms in the "Upward hand" position. These exercises are made more difficult by progressing to the "Across hand" and "Submarine stream" positions. *Trunk forward* exercises are most easily performed with the "Trunk forward" and "Trunk backward" feet on the same may be in the "Upward hand" position, and the feet in the position of "Attention." *Arms raised and opening* and *Trunk forward* are well done in the "Trunk forward" position, and *Trunk backward* and *Arms raised and opening* are well done in the "Trunk backward" position.

maintained when the arms are in the "Hips firm" position. In the position of "Attention" the balance is good, but the hands are not fixed. By raising the arms into the "Upward bend," the "Across bend," the "Sideways stretch," the "Forward stretch," the "Neck rest" and eventually into the "Upward stretch" positions, the general balance of the body is altered and the same exercise taken in turn from these different starting positions becomes more difficult to perform correctly.

3. By altering the position of the body as well as, or instead of, that of the feet or arms. For instance, a "Lunge" or "Trunk forward bend" may be used as starting positions.

4. By taking an exercise more slowly. For example, *Knee raising* or *Heel raising and Knee bending*, are comparatively easy exercises when taken moderately quickly, but much more difficult when taken slowly and deliberately.

5. By increasing the time during which any position is maintained. This may be done by commanding the exercise more slowly, for example, *Trunk bending backward* or *Leg raising*; or, by giving some additional movement of the arms or feet while the position is retained. For example, *Arm stretching upward with Hand closing and opening*, or *Knee raising with Foot bending and stretching*.

6. By a combination of movements. For example, two (or one) simple movements of the feet may be combined with two (or one) simple movements of the arms, as in *Feet astride placing with Arm stretching sideways*; or as in *Feet astride placing with Hips Firm*; or as in *Foot placing forward with Arm stretching upward*. Movements may be combined in two different directions, as in *Alternate arm stretching backward and upward*, or in *Leg raising sideways with Arm raising forward*. It must always be remembered that the Progression, in whichever way it is obtained, must be gradual, and that each step in Progression must be learned before a new one is attempted.

A few words may be added as to progression in different groups:

Progression in Trunk Exercises.—Trunk bendings forward or backward are most easily performed with the feet apart, giving a wide firm base, and with the arms in the position of "Hips firm." These movements are made more difficult by narrowing the base and raising the arms. *Trunk bending backward*, for instance, is first learned with the "Feet astride" and "Hips firm." Later on the arms may be in the "Upward bend" position, and the feet in the position of Attention. "Arms across bend" and "Neck rest" are still more difficult positions for the arms, and "Feet close" or "Foot placing forward" for the feet. For *Trunk bending forward and downward* the most easy position is

"Feet astride" and "Arms upward stretch." Progression may be obtained by taking the exercise from the standing position. *Trunk turning* can be performed more easily with a narrow base in the standing position, as twisting of the knees is then less likely to occur. Progression may be made in this case by taking the exercise from the Feet astride position. *Trunk bending sideways* should be first taught in the "Feet astride, Hips firm" position. Progression may be obtained as in *Trunk bending backward*. Trunk turning is the easier movement and should always precede Trunk bending sideways when both exercises are included in one Table. The two movements may be combined as one exercise with older children.

Progression in Arm Stretchings.—Arm movements are taught, at first, in one direction only, sideways, upward or forward. Arm stretching backward is the most difficult and the least useful of the single movements. Later on varying combinations may be taken in the same exercise, or the arms may move twice each way instead of once. Progression may also be obtained by teaching asymmetrical movements in which the arms move simultaneously in different directions, as for instance *Alternate arm stretching forward and upward*; or by combining foot with arm movements, as for example, *Arm stretching upward and downward with a step to the right or left*.

Progression in Balance Exercises must be continuous throughout the whole course, because as soon as any one balance exercise has been acquired it is no longer a test of balance for the class; indeed, it may, if desired, be placed among the Introductory exercises. To ensure progression in this group, increase the "balance" effect of familiar balance exercises by combining them with head or foot movements, with Arm bendings and stretchings, or with Shoulder-blade exercises. *Heel raising and Knee bending*, for example, is at first taken in the "Hips firm" position. Progression is made by altering the position of the arms, or by combining the exercise with Arm stretching in various directions, with Head turning or with Foot placing.

Progression of Shoulder-Blade Exercises.—This depends almost entirely on the position of the body, and these exercises must be taken first from the standing position. The slower exercises, such as Arm parting, should as a rule be taught before the quicker movements of Arm flinging and swinging. Progression is made by taking a new commencing position such as "Trunk forward bend" or a "lunge" forward or outward.

CHAPTER VII THE TABLES OF EXERCISES. GENERAL INSTRUCTION.

The following tables of exercises have been divided into groups A, B, and C, and are arranged in order. The tables in group A are intended for use by the average child. The first table in group A is intended for use by children aged 10 to 12. The second table in group A is intended for use by children aged 12 to 14. The third table in group A is intended for use by children aged 14 to 16. The fourth table in group A is intended for use by children aged 16 to 18. The fifth table in group A is intended for use by children aged 18 to 20. The sixth table in group A is intended for use by children aged 20 to 25. The seventh table in group A is intended for use by children aged 25 to 30. The eighth table in group A is intended for use by children aged 30 to 35. The ninth table in group A is intended for use by children aged 35 to 40. The tenth table in group A is intended for use by children aged 40 to 45. The eleventh table in group A is intended for use by children aged 45 to 50. The twelfth table in group A is intended for use by children aged 50 to 55. The thirteenth table in group A is intended for use by children aged 55 to 60. The fourteenth table in group A is intended for use by children aged 60 to 65. The fifteenth table in group A is intended for use by children aged 65 to 70. The sixteenth table in group A is intended for use by children aged 70 to 75. The seventeenth table in group A is intended for use by children aged 75 to 80. The eighteenth table in group A is intended for use by children aged 80 to 85. The nineteenth table in group A is intended for use by children aged 85 to 90. The twentieth table in group A is intended for use by children aged 90 to 95. The twenty-first table in group A is intended for use by children aged 95 to 100.

The tables in group B are intended for use by children who are above the average. The tables in group C are intended for use by children who are below the average.

It will be seen that in the first table of each group the exercises are arranged in order of increasing difficulty. In the second table of each group the exercises are arranged in order of increasing difficulty. In the third table of each group the exercises are arranged in order of increasing difficulty. In the fourth table of each group the exercises are arranged in order of increasing difficulty. In the fifth table of each group the exercises are arranged in order of increasing difficulty. In the sixth table of each group the exercises are arranged in order of increasing difficulty. In the seventh table of each group the exercises are arranged in order of increasing difficulty. In the eighth table of each group the exercises are arranged in order of increasing difficulty. In the ninth table of each group the exercises are arranged in order of increasing difficulty. In the tenth table of each group the exercises are arranged in order of increasing difficulty. In the eleventh table of each group the exercises are arranged in order of increasing difficulty. In the twelfth table of each group the exercises are arranged in order of increasing difficulty. In the thirteenth table of each group the exercises are arranged in order of increasing difficulty. In the fourteenth table of each group the exercises are arranged in order of increasing difficulty. In the fifteenth table of each group the exercises are arranged in order of increasing difficulty. In the sixteenth table of each group the exercises are arranged in order of increasing difficulty. In the seventeenth table of each group the exercises are arranged in order of increasing difficulty. In the eighteenth table of each group the exercises are arranged in order of increasing difficulty. In the nineteenth table of each group the exercises are arranged in order of increasing difficulty. In the twentieth table of each group the exercises are arranged in order of increasing difficulty. In the twenty-first table of each group the exercises are arranged in order of increasing difficulty.

The following instructions apply to all the tables. It is to be noted that the method of working the tables is as follows:

Exercise	Time	Frequency	Remarks
1	10 min.	10 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
2	15 min.	15 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
3	20 min.	20 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
4	25 min.	25 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
5	30 min.	30 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
6	35 min.	35 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
7	40 min.	40 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
8	45 min.	45 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
9	50 min.	50 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
10	55 min.	55 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
11	60 min.	60 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
12	65 min.	65 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
13	70 min.	70 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
14	75 min.	75 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
15	80 min.	80 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
16	85 min.	85 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
17	90 min.	90 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
18	95 min.	95 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.
19	100 min.	100 times	For the first 5 min. of the exercise the child should be instructed to work as fast as possible.

It will be seen that the time for each exercise is 5 minutes less than the time for the previous exercise. This is done in order to give the child a rest between exercises. The frequency of each exercise is the same as the time for the exercise. The remarks in the table are intended to guide the child in working the tables.

CHAPTER VII.

THE TABLES OF EXERCISES.

GENERAL INTRODUCTION.

The following 72 Tables of Exercises have been divided into 3 Series, A, B, and C, each containing 24 Tables. The Tables in *Series A* are intended for children of 7-9 years of age. The first 12 Tables may suitably be used in Standard I., the second 12 in Standard II. *Series B* is arranged for children of 9-11 years of age, the first 12 Tables of the series being suitable for Standard III., the second 12 for Standard IV. *Series C* is intended for children of 11-14 years of age. The first 12 Tables of the series may be used in Standard V. The second 12 are designed for Standards VI. and VII. As these will therefore be in use, in some cases, for the training of the same pupils for the last two years of their school life, a somewhat greater variety has been given to the exercises, and optional abdominal exercises have been added in distinctive type and marked in each case by an asterisk instead of a number.

It will thus be seen that in the first year (7-8) there are 12 Tables, or four for each of the three terms; in the second year (8-9) a second 12 Tables, and so on. Whilst, therefore, it is necessary for the teacher to have a general knowledge of all the exercises in the Syllabus, he will, in point of fact, only require to teach four new Tables in each term. In other words, the Tables of the Syllabus extend over the whole period of school life from 7 to 14 years, and must be viewed in the light of that fact. For convenience of reference, the Tables have been numbered consecutively throughout the three series.

The following plan will, it is hoped, make quite clear the method of working the Scheme of the Tables:—

Series.	Approximate Age of Children	Year of Work in Physical Exercises.	Work for 1st Term.	Work for 2nd Term.	Work for 3rd Term.
A. }	7-8	First	Tables 1-4	Tables 5-8	Tables 9-12
	8-9	Second	Tables 13-16	Tables 17-20	Tables 21-24
B. }	9-10	Third	Tables 25-28	Tables 29-32	Tables 33-36
	10-11	Fourth	Tables 37-40	Tables 41-44	Tables 45-48
C. }	11-12	Fifth	Tables 49-52	Tables 53-56	Tables 57-60
	12-14	Sixth and Seventh.	Tables 61-64	Tables 65-68	Tables 69-72

It will be understood that this "Key" is for the general purpose of guidance, and is not intended to lay down rigid restrictions.

EXERCISES AND STARTING POSITIONS.

Each Table, after the first, regarded as a whole is an advance on the preceding one, but no Table consists of an entirely new set of exercises. The exercises are shown in the left, the commands in the right hand, column. The starting (or commencing) position of each exercise is described in brackets after the exercise proper, unless the movement is to be taken from the position of Attention. Take, for instance, FEET CLOSING AND OPENING (HIPS FIRM) in Table 1 of Series A, "Feet closing and opening" is the exercise, and "Hips firm" the starting position which must be assumed before the exercise proper is commenced.

COMMANDS.

The full commands are given whenever an exercise is described for the first time, but not in any subsequent Tables. The commands for starting positions, however, if already familiar, are not described even with a new exercise. The commands for starting positions, or preliminary movements which are not to be repeated, are placed in brackets to distinguish them from the commands for the essential part of the exercise which is to be repeated three or four times. Take, for instance, ARM FLINGING (ARMS ACROSS BEND) in Table 3 of Series A. The command is given as (**Arms across—bend**), **Arms—fling**, **Arms—bend**. (**Attention**.) "Arms across—bend" and "Attention" are each to be commanded once only, the former at the beginning, the latter at the end of the exercise, whereas "Arms—fling, Arms—bend," are to be repeated several consecutive times.

ORDER OF EXERCISES.

The exercises in the Tables are arranged, and the Groups numbered, in the order described in the Chapter on the Order and Progression of Movements (*see* p. 65) as follows:—

1. Introductory and breathing exercises.
2. Trunk bending backward and forward.
3. Arm bending and stretching.
4. Balance exercises.
5. Shoulder-blade exercises.
[Abdominal Exercises.]
6. Trunk turning and bending sideways.
7. Marching, running, jumping, games, etc.
8. Breathing exercise.

As far as practicable, every lesson should include exercises from each of the above groups, but in very short lessons it is evident that this will not be possible, though even in such lessons due proportion should be maintained. If each exercise is given some three or four times it will be found that the Table can be easily worked through in the usual period of, say, 20 minutes.

The Order of the ... in every case of the ... have not been specifically mentioned, but ... be found in the Chapter on ...

In the ... has been made to ... and ...

It is ...

The ...

It is ...

The ...

The ...

The ...

The ...

The ...

The Order movements which are necessary in every case at the commencement of each lesson have not been specifically mentioned, but particulars of them will be found in the Chapter on Class Arrangements (*see* p. 59).

In the last 12 Tables of Series C provision has been made for Abdominal exercises proper after the Shoulder-blade exercises, and these may be taught wherever the conditions are suitable.

METHOD OF USING THE TABLES.

One reason for providing Tables is to ensure a gradual but steady and continuous progression in the teaching of physical exercises throughout the whole school life. Full opportunity must be given for thoroughly mastering every movement, but at the same time the teacher must carefully guard against allowing the lesson to become monotonous. It is suggested that the Tables may be used in the following manner :—Table 1 (A) must be learned as it stands, and as the children will be for the most part beginners, this may occupy five or six lessons. In about the 7th lesson, one exercise from Table 2 may be substituted for the corresponding exercise in Table 1; in the 8th lesson, a second or third may be substituted; and in the 9th a further change should be made. Table 2 will thus gradually replace Table 1. By a similar process Table 3 will in turn replace Table 2, and so forth. In this way no two lessons need ever be exactly alike and monotony will be avoided. It will also be easy to spend as much or as little time as is considered desirable in practising individual exercises. This method will be found, on the whole, to be more satisfactory than the alternative plan of teaching each Table for a number of lessons and then passing abruptly to the next Table.

Teachers who have had special opportunities for gaining instruction in making Tables will not be required to adhere in precise detail to the Tables given in this Syllabus. The general arrangement of the lessons must, however, be followed.

N.B.—It is, of course, necessary in using these or any other Tables of Exercises, which are to be applied to a number of children varying in strength and physique, that the teacher should recognise the great importance of not overstraining any child. Careful watch should be kept to see that undue fatigue is avoided. A sufficient amount of rest and variety of exercise should, therefore, be allowed in all cases.

NOTES ON THE TABLES IN SERIES A.

(For children aged 7-9 years.)

This Series contains the first set of 24 Tables; Nos. 1-12, may be used in Standard I., and Tables 13-24 in Standard II.

Order movements, as described in Chapter V., p. 59, must always precede the Introductory exercises.

Breathing exercises (see Chapter IV., p. 57) may be given if required after any movement as well as at the beginning and end of the lesson.

Marching exercises (see p. 50) may occasionally be taken in the Introductory group instead of the foot movements, to give greater variety. Any marching exercise with which the class is already familiar may be taken in Group 7, and running and jumping exercises in the same group may be varied as desired. A *game* may also be given for a few minutes towards the end of each lesson. This is perhaps especially valuable in teaching boys. Some examples of suitable games and skipping exercises are given in Appendix A., and the teacher may vary, or add to, these as he considers desirable. It may be practicable also in this age group to introduce some simple dancing steps. With the exception of marching, it is not intended that all the exercises set out in Group 7, in this or any Series, shall necessarily be taken in one and the same lesson. The selection and variation may be left largely to the discretion and initiative of the teacher.

Stand easy or *sit down* must be commanded sufficiently often between the exercises to prevent fatigue.

TABLE I.

EXERCISES	COMMANDS
1. Stand at attention. Right arm raised and lowered. Head turned. Head thrown forward.	Eyes - at Attention. Eyes - to the right. Eyes - to the left. (Attention.) Arms upward - front. Arms downward - front. Eyes - to the front. Breath - at Attention. Breath - at Attention.
2. Head thrown backward. Head thrown forward.	(Eyes - to the front.) Head backward - front. Head forward - front.
3. Arms raised and lowered.	(Attention.) Arms upward - front. Arms downward - front. Arms - front.
4. Arms raised and lowered. Arms raised and lowered.	(Arms downward - front.) Eyes - to the front. Eyes - to the front. Arms upward - front. Arms downward - front.



5. Arms raised and lowered. Arms raised and lowered.	Eyes - to the front. Eyes - to the left. Eyes - to the right. (Attention.) Arms upward - front. Arms downward - front.
6. Arms raised and lowered. Arms raised and lowered.	Eyes - to the front. Eyes - to the front. Eyes - to the front. Eyes - to the front. Eyes - to the front.
7. Arms raised and lowered. Arms raised and lowered.	Eyes - to the front. Eyes - to the front. Eyes - to the front. Eyes - to the front. Eyes - to the front.
8. Arms raised and lowered. Arms raised and lowered.	Eyes - to the front. Eyes - to the front. Eyes - to the front. Eyes - to the front. Eyes - to the front.

NOTES ON THE TABLES IN SERIES A.

(For a full description of the tables, see the Introduction.)

* The tables contain the full set of 24 Tables, Nos. 1-24, arranged in Standard I, and Tables 1-24, in Standard II.

† The tables are arranged in the order of the 24 Tables, Nos. 1-24, in Standard I, and Tables 1-24, in Standard II.

‡ The tables are arranged in the order of the 24 Tables, Nos. 1-24, in Standard I, and Tables 1-24, in Standard II.

§ The tables are arranged in the order of the 24 Tables, Nos. 1-24, in Standard I, and Tables 1-24, in Standard II.

¶ The tables are arranged in the order of the 24 Tables, Nos. 1-24, in Standard I, and Tables 1-24, in Standard II.

TABLE 1.

EXERCISES.	COMMANDS.
<p>1. a. HIPS FIRM. b. FEET CLOSING AND OPENING. (HIPS FIRM.) c. ARM BENDING UPWARD. d. BREATHING. (HIPS FIRM.)</p>	<p>a. Hips—firm. Attention. b. (Hips—firm.) Feet—close. Feet—open. (Attention.) c. Arms upward—bend. Arms downward—stretch. d. (Hips—firm.) Breathe—in. Breathe—out. (Attention.) [or, Breathing—commence.]</p>
<p>2. HEAD BENDING BACKWARD. (HIPS FIRM.)</p>	<p>(Hips—firm.) Head backward—bend. Head upward—stretch.</p>
<p>3. ARM STRETCHING SIDWAYS.</p>	<p>(Attention.) (Arms upward—bend.) Arms sideways—stretch. Arms—bend. (Arms downward—stretch.)</p>
<p>4. HEEL RAISING. (HIPS FIRM.)</p>	<p>(Hips—firm.) Heels—raise. Heels—lower. (Attention.)</p>
<p>5. *ARM BENDING ACROSS.</p>	<p>Arms across—bend. Attention.</p>
<p>6. TRUNK TURNING. (HIPS FIRM.)</p>	<p>(Hips—firm.) Trunk to the left (right)—turn. Trunk forward— turn. (Attention.)</p>
<p>7. a. MARCHING. b. RUNNING or GAME.</p>	<p>a. Forward—march. Class—halt, 1, 2. b. Forward—run. Class—halt, 1, 2, 3, 4.</p>
<p>8. BREATHING. ARM RAISING SIDE- WAYS.</p>	<p>With deep breathing. Arms sideways—raise. Arms downward—lower.</p>



* Note.—An asterisk is attached to the Exercise illustrated in each Table.

TABLE 2.

EXERCISES.

1. a. BREATHING. ARM RAISING
SIDWAYS.
 - b. FEET ASTRIDE PLACING. (HIPS
FIRM.)
 - c. HEAD BENDING BACKWARD.
(HIPS FIRM.)
2. *TRUNK BENDING FORWARD. (FEET
ASTRIDE, HIPS FIRM.)



3. ARM STRETCHING UPWARD.
4. HEEL RAISING AND KNEE BEND-
ING. (HIPS FIRM.)
5. ARM RAISING FORWARD AND
PARTING.
6. TRUNK TURNING. (HIPS FIRM.)
7. a. MARCHING.
- b. ASTRIDE JUMPING. (HIPS FIRM)
or GAME.
8. BREATHING. (HIPS FIRM.)

COMMANDS.

- b. (Hips—firm.)
Feet astride—place, 1, 2.
Feet together—place, 1, 2.
(Attention.)
- (Hips—firm. Feet astride—place.)
Trunk forward—bend.
Trunk upward—stretch.
(Feet together—place. Attention.)

- (Arms upward—bend.)
Arms upward—stretch.
Arms—bend.
(Arms downward—stretch.)
- (Hips—firm.)
Heels—raise, Knees—bend.
Knees—stretch, Heels—lower.
(Attention.)
(Arms forward—raise.) Arm part-
ing by numbers—1, 2.
(Arms downward—lower.)
- b. (Heels—raise.)
Astride jumping—begin, 1, 2.
Class—halt, 1, 2. (Heels—lower.)

TABLE 3.

PERCENTAGE

OPERATED

1. ...

... ..

2. ...

3. ...

4. ...



5. ...

6. ...

7. ...

8. ...

9. ...

TABLE 3.


EXERCISES	COMMANDS
1. a. Exercises: Arm, waist, knees b. Feet astride - stance, (Heels together) c. Heels together - stance (Heels apart)	(Hips - feet) Feet astride - stance 1, 2 Feet together - stance 1, 2 (Attention.)
2. *Trunk, shoulder forward (Feet astride, heels apart)	Hips - feet Feet astride - stance Trunk forward - lead Trunk upward - stance Feet together - stance Attention.
	
3. Arms extended forward	(Arms upward - stance) Arms upward - stance Arms - lead Arms downward - stance
4. Heels together with arms extended forward (Heels apart)	(Hips - feet) Heels - stance Knees - lead Knees - stance Heels - stance (Attention.)
5. Arms extended forward with feet together	(Arms forward - stance) Arms part- ing by numbers 1, 2 (Arms downward - stance)
6. Trunk forward (Heels apart)	
7. a. Exercises b. Arms extended (Heels apart) or lead	(Heels - stance) Astride jumping - stance 1, 2 Heels - stance 1, 2 (Heels - stance)
8. Exercises (Heels apart)	

TABLE 3.

- EXERCISES.**
1. a. HEAD BENDING BACKWARD.
b. BREATHING. ARM RAISING FORWARD AND PARTING.
c. ALTERNATE TOE RAISING. (HIPS FIRM.)
 2. TRUNK BENDING BACKWARD. TRUNK BENDING FORWARD. (FEET ASTRIDE. HIPS FIRM.)
 3. ARM STRETCHING SIDEWAYS AND UPWARD.
 4. *HEEL RAISING. (FEET ASTRIDE, HIPS FIRM.)
 5. ARM RAISING SIDEWAYS.
 6. TRUNK BENDING SIDEWAYS. (FEET ASTRIDE, HIPS FIRM.)
 7. a. MARCHING.
b. MARCHING ON THE TOES.
c. GAME.
 8. BREATHING. (HIPS FIRM.)

- COMMANDS.**
- c. Alternate toe raising, right (left) foot—*begin, 1, 2, 1, 2.*
(On 1, the right toe is raised; on 2, the right toe is lowered and the left toe simultaneously raised.)
Class—halt, 1, 2.
Trunk backward—bend. Trunk upward—stretch. Trunk forward—bend. Trunk upward—stretch.
(Arms upward—bend.) Arms sideways—stretch. Arms—bend. Arms upward—stretch. Arms—bend.
(Arms downward—stretch.)



- Arms sideways—raise. Arms downward—lower.**
Trunk to the left (right)—bend. Trunk upward—stretch.
b. Heels—raise. Forward—march. Class—halt, 1, 2, 3.
(On 2, the feet are brought together, and on 3, the heels are lowered.)

TABLE 4.

EXERCISES.	COMMANDS.
1. a. BREATHING. (HANDS ON CHEST.)	a. (Hands on chest— <i>place</i> .) Breathe— <i>in</i> . Breathe— <i>out</i> .
b. FEET ASTRIDE PLACING WITH ARM STRETCHING SIDEWAYS.	(Attention.) b. With feet astride, arms sideways— <i>stretch</i> , 1, 2. (On 1, the left foot is moved to the side and the arms are bent upwards. On 2, the right foot is moved to the side and the arms are stretched sideways.)
c. NECK REST.	Feet and arms in position— <i>place</i> , 1, 2. (On 1, the left foot is brought back, and the arms bent. On 2, the right foot is brought back and the arms stretched downward.)
2. TRUNK BENDING FORWARD. (FEET ASTRIDE, HIPS FIRM.)	c. Neck— <i>rest</i> . Attention.
3. ARM STRETCHING FORWARD.	(Arms upward— <i>bend</i> .) Arms forward— <i>stretch</i> . Arms— <i>bend</i> . (Arms downward— <i>stretch</i> .)
4. HEEL RAISING AND KNEE BENDING. (HIPS FIRM.)	Arm turning outward and inward by numbers—1, 2.
5. ARM TURNING OUTWARD AND INWARD.	(On 1, the arms are turned until the palms are directed outward; on 2, the arms are turned inward, and take the position of Attention.)
6. TRUNK TURNING. (HIPS FIRM.)	b. First skipping exercise, ready— <i>go</i> . Halt.
7. a. MARCHING. b. FIRST SKIPPING EXERCISE.†	(On the word "ready," the arms are extended to the sideways stretch position. On "go," the skipping is commenced.)
c. GAME.	
8. BREATHING. ARM RAISING FORWARD AND PARTING.	

† See Appendix A.

TABLE 5.

- EXERCISES**
1. To hold arms backward, and arms forward (fig. 1)
 2. Arms up, arms down (fig. 2)
 3. Arms up, arms down (fig. 3)
 4. Arms up, arms down (fig. 4)
 5. Arms up, arms down (fig. 5)
 6. Arms up, arms down (fig. 6)
 7. Arms up, arms down (fig. 7)
 8. Arms up, arms down (fig. 8)
 9. Arms up, arms down (fig. 9)
 10. Arms up, arms down (fig. 10)

- FORMS**
1. Head backward—head up
 2. Head forward—head up
 3. Alternate head turning, right (fig. 1, 2)
 4. Class—1, 2
- The exercise is conducted standing or sitting, but the feet are kept together in the case of the head being slightly bent to the left or right.



1. Arms upward—1, 2, 3
2. Arms downward—1, 2, 3
3. This exercise is conducted standing or sitting, but the feet are kept together in the case of the head being slightly bent to the left or right.
4. Arms up—1, 2, 3, 4
5. This exercise is conducted standing and knee bending when possible and necessary. On 1, the knees are bent; on 2, the knees are straight; on 3, the knees are bent; on 4, the knees are straight.

TABLE 1.

EXERCISES	COMMANDS
1. a. Exercises on floor b. Exercises on floor with c. Exercises on floor	a. March on chest—(see 1.) b. Breathe—(see 1.) c. Breathe—(see 1.)
2. Exercises on floor with a. Exercises on floor	<p>(Attention)</p> <p>b. With feet astride, arms side-ways—(see 1, 2.) (On 1, the left hand is raised above the head and the arms are held outwards. On 2, the right hand is raised to the side and the arms are held outwards.) Feet and arms in positions—(see 1, 2.) (On 1, the left hand is raised above the head and the arms are held outwards. On 2, the right hand is raised to the side and the arms are held outwards.)</p> <p>c. Feet—(see 1.) d. Feet—(see 1.)</p>
3. Exercises on floor with a. Exercises on floor	<p>(Arms upward—(see 1.) Arms forward—(see 1.) Arms—(see 1.) Arms downward—(see 1.)</p>
4. Exercises on floor with a. Exercises on floor	<p>Arms turning outward and inward by numbers—(see 1, 2.) (On 1, the arms are raised and the palms are turned outwards. On 2, the arms are lowered and the palms are turned inwards.)</p>
5. Exercises on floor with a. Exercises on floor	<p>First skipping exercise, ready—(see 1.)</p>
6. Exercises on floor with a. Exercises on floor	<p>(On the word "ready," the arms are raised to the side and the palms are turned outwards. On the word "skipping," the arms are lowered and the palms are turned inwards.)</p>
7. Exercises on floor with a. Exercises on floor	

TABLE 5.


EXERCISES.	COMMANDS.
<p>1. *a. HEAD BENDING BACKWARD, HEAD BENDING FORWARD. (HIPS FIRM.)</p> <p>b. ALTERNATE HEEL RAISING. (HIPS FIRM.)</p> <p>c. BREATHING, ARM RAISING SIDWAYS.</p>	<p>a. Head backward—<i>bend</i>. Head upward—<i>stretch</i>. Head forward—<i>bend</i>. Head upward—<i>stretch</i>.</p> <p>b. Alternate heel raising, right (left) foot—<i>begin</i>, 1, 2. Class—<i>halt</i>, 1, 2. (This exercise is similar to alternate toe raising, but the heels are raised instead of the toes, the knee being slightly bent as the heel is raised.)</p>
<p>2. TRUNK BENDING BACKWARD. TRUNK BENDING FORWARD. (FEET ASTRIDE, ARMS BEND.)</p>	
<p>3. ARM STRETCHING SIDEWAYS AND DOWNWARD.</p>	<p>Arms sideways—<i>stretch</i>, 1, 2. Arms downward—<i>stretch</i>, 1, 2. (On 1, the arms are bent upward, on 2, they are stretched sideways. The return movement is performed in the same way.)</p>
<p>4. HEEL RAISING.</p> <p>5. ARM FLINGING. (ARMS ACROSS BEND.)</p>	<p>Arms—<i>fling</i>. Arms—<i>bend</i>. Attention.</p>
<p>6. TRUNK BENDING SIDEWAYS. (HIPS FIRM.)</p> <p>7. a. MARCHING. b. PREPARATION FOR JUMPING. (HIPS FIRM.) c. GAME.</p>	<p>b. Prepare to jump—1, 2, 3, 4. (This exercise is heel raising and knee bending taken quickly and consecutively. On 1, the heels are raised; on 2, the knees are bent; on 3, the knees are stretched; on 4, the heels are lowered.)</p>
<p>8. BREATHING. (HIPS FIRM.)</p>	

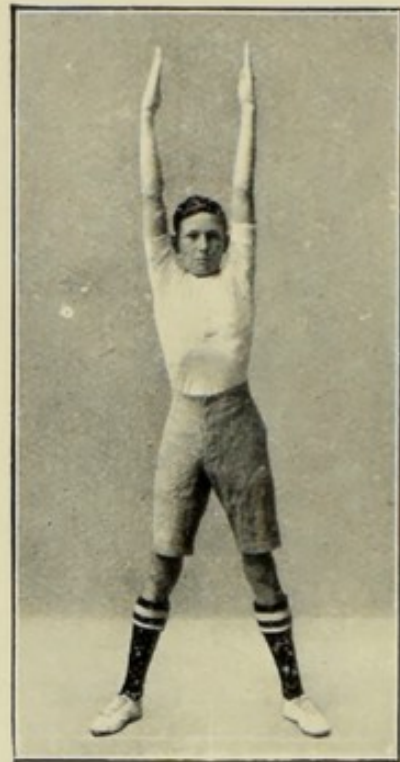
TABLE 6.

EXERCISES.

1. a. BREATHING. ARM RAISING FORWARD AND PARTING.
- b. HIPS FIRM AND NECK REST.
- c. *FEET ASTRIDE PLACING WITH ARM STRETCHING UPWARD.

COMMANDS.

- a. Right hand neck rest, left hand hip—*firm*.
Arms—*change*.
(Attention.)
- c. With feet astride, arms upward—*stretch*, 1, 2.
Feet and arms in position—*place*, 1, 2.



2. TRUNK BENDING FORWARD. (ARMS BEND.)
3. ARM STRETCHING FORWARD AND DOWNWARD.
4. HEEL RAISING AND KNEE BENDING. (ARMS BEND)
5. ARM TURNING OUTWARD AND INWARD.
6. TRUNK TURNING. (HIPS FIRM, FEET CLOSE.)
7. a. MARCHING.
- b. RUNNING ON THE SPOT. (HIPS FIRM.) Or, ASTRIDE JUMPING. (HIPS FIRM.)
8. BREATHING. (HANDS ON CHEST.)

Arms forward—*stretch*, 1, 2.
Arms downward—*stretch*, 1, 2.

Arm turning outward and inward by numbers—1, 2.

b. Running on the spot, left (right) foot—*begin*. Class—*halt*, 1, 2, 3, 4.

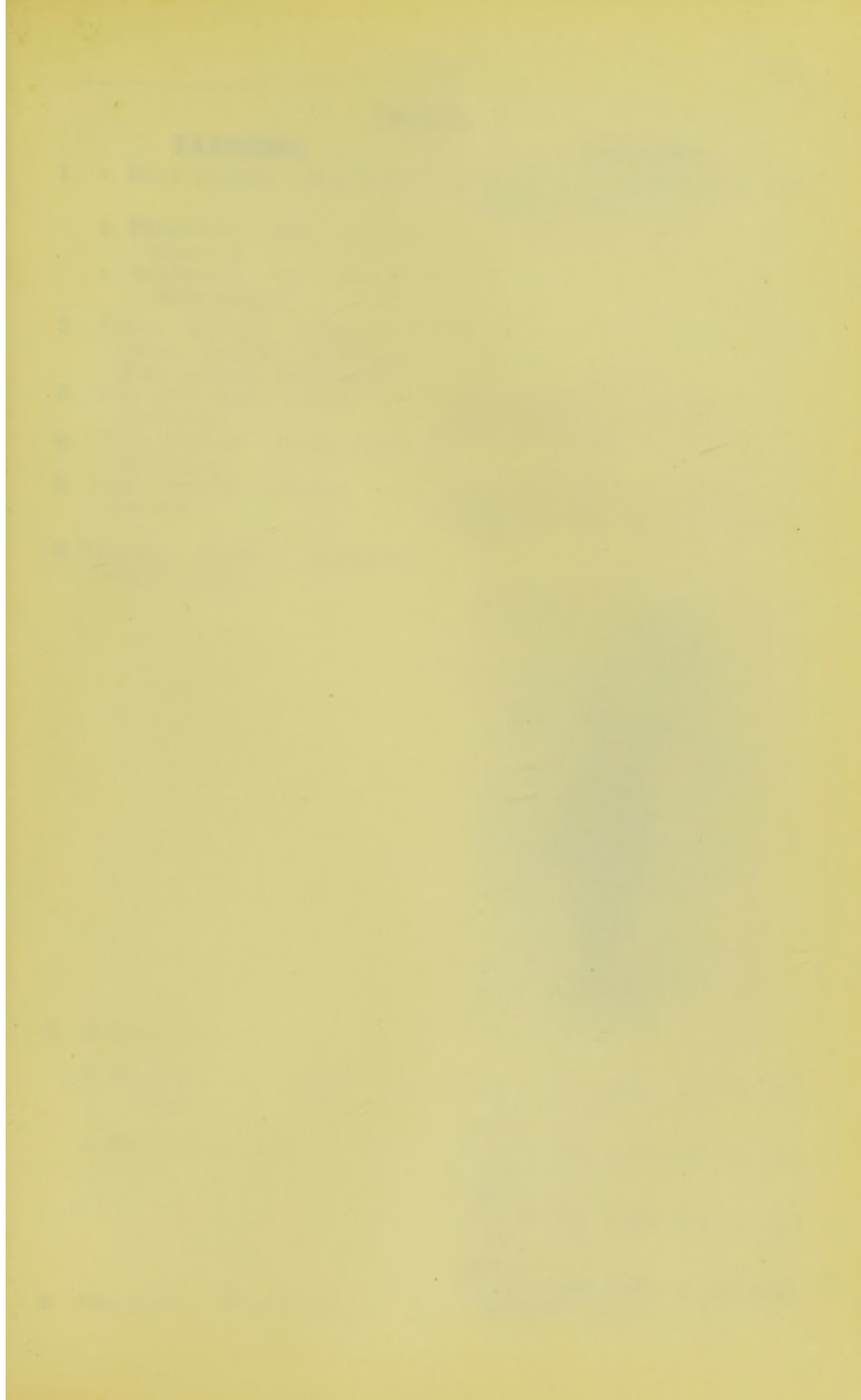


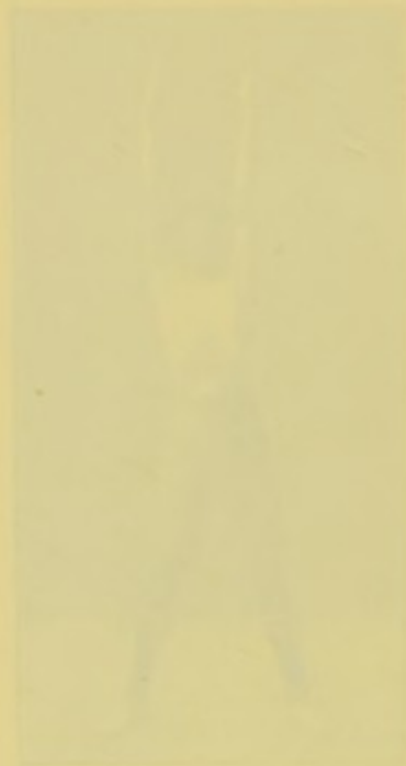
TABLE 6.

EXERCISES

COMMANDS

1. a. Attention. Feet apart
b. Arms forward and backward
c. Feet forward and backward
d. Feet forward and backward
e. Feet forward and backward

1. Right hand neck rest, left hand
hip—Attention.
Arms—Attention.
(Attention.)
2. With feet astride, arms upward
by numbers—1, 2.
Feet and arms in position—ones—
1, 2.



2. Arms forward and backward
by numbers—1, 2.
3. Arms forward and backward
by numbers—1, 2.
4. Arms forward and backward
by numbers—1, 2.
5. Arms forward and backward
by numbers—1, 2.
6. Arms forward and backward
by numbers—1, 2.
7. Attention.
8. Attention. Feet apart
Arms forward and backward
by numbers—1, 2.
9. Attention. Feet apart

- Arms forward—ones—1, 2.
Arms backward—ones—1, 2.
Arm turning outward and inward
by numbers—1, 2.
3. Attention on the spot, left (right)
feet—ones—ones—ones—ones—
1, 2, 3, 4.

TABLE 7.

EXERCISES.

1. a. HEAD TURNING. (HIPS FIRM.)
 b. BREATHING. ARM RAISING
 SIDWAYS.
 c. ALTERNATE TOE RAISING.
 (HIPS FIRM.)
2. TRUNK BENDING FORWARD.
 TRUNK BENDING BACKWARD.
 (FEET ASTRIDE, HIPS FIRM.)
3. ARM STRETCHING UPWARD AND
 DOWNWARD.
4. HEEL RAISING. (FEET CLOSE,
 HIPS FIRM.)
5. ARM RAISING FORWARD AND
 UPWARD.
6. *TRUNK BENDING SIDWAYS.
 (ARMS BEND.)

COMMANDS.

- a. Head to the left (right)—*turn.*
 Head forward—*turn.*

Arms upward—*stretch, 1, 2.*
 Arms downward—*stretch, 1, 2.*

Arms forward and upward—*raise.*
 Arms forward and downward—*lower.*



7. a. MARCHING.
 b. MARCHING IN TWOS AND
 FOURS.
 c. RUNNING or GAME.
8. BREATHING. (HIPS FIRM.)

- b. One to the right, one to the
 left, forward—*march.*
 Centre—*twos.*
 Two to the right, two to the
 left—*divide.*
 Centre—*fours.*
 Two to the right, two to the
 left—*divide.*
 Centre—*twos.*
 To the right (left) in one line,
 forward—*march.*

TABLE 8.

EXERCISES.

1. a. MARKING TIME. (HIPS FIRM.)
MARCHING.
- b. HEAD BENDING BACKWARD.
(ARMS BEND.)
- c. BREATHING. ARM RAISING
FORWARD AND PARTING.
2. *TRUNK BENDING BACKWARD.
TRUNK BENDING FORWARD.
(FEET ASTRIDE, ARMS BEND.)
3. ARM STRETCHING SIDEWAYS,
UPWARD AND DOWNWARD.
4. HEEL RAISING, AND KNEE
BENDING. (ARMS BEND.)
5. ARM RAISING FORWARD AND
UPWARD, LOWERING SIDEWAYS
AND DOWNWARD.
6. a. TRUNK TURNING.
(ARMS BEND.)
- b. TRUNK BENDING SIDEWAYS.
(FEET ASTRIDE, HIPS FIRM.)
7. a. GAME.
- b. ASTRIDE JUMPING *or* SKIPPING.
(HIPS FIRM.)
8. BREATHING. ARM RAISING SIDE-
WAYS.

COMMANDS.

- a. Mark—*time* (left, right).
(Class—*halt*, 1, 2.)



- Arms sideways—*stretch*, 1, 2.
Arms upward—*stretch*, 1, 2.
Arms downward—*stretch*, 1, 2.

- Arms forward and upward—*raise*.
Arms sideways and downward—
lower.

TABLE 9

EXERCISES

COMMENTS

- 1. ...
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- 3. ...
- 4. ...
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- 96. ...
- 97. ...
- 98. ...
- 99. ...
- 100. ...

TABLE 6

EXERCISES

COMMENTS

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

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TABLE 9.

EXERCISES.

1. a. BREATHING. (HANDS ON CHEST.)
 b. HIPS FIRM AND NECK REST.
 c. FEET CLOSING AND OPENING. (HIPS FIRM.)
2. a. TRUNK BENDING FORWARD. (FEET ASTRIDE, HIPS FIRM.)
 b. TRUNK BENDING FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD STRETCH.)
3. *ARM STRETCHING SIDEWAYS, FORWARD AND DOWNWARD.
4. HEEL RAISING. (ARMS BEND.)
5. ARM FLINGING. (ARMS ACROSS BEND.)
6. TRUNK TURNING. (FEET ASTRIDE, HIPS FIRM.)
7. a. MARCHING.
 b. PREPARATION FOR JUMPING.
 c. GAME OF SKIPPING.
8. BREATHING. ARM RAISING FORWARD AND PARTING.

COMMANDS.

- b. Trunk forward and downward—*bend.*
 Trunk forward and upward—*stretch.*



TABLE 10.

EXERCISES.

1. a. BREATHING. ARM RAISING FORWARD AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.
- b. HEAD BENDING FORWARD AND BACKWARD.
- c. ALTERNATE HIPS FIRM AND NECK REST.
2. TRUNK BENDING BACKWARD. TRUNK BENDING FORWARD. (HIPS FIRM.)
3. *ARM STRETCHING SIDWAYS, FORWARD, UPWARD AND DOWNWARD.
4. HEEL RAISING AND KNEE BENDING. (ARMS BEND.)
5. ARM RAISING FORWARD AND SWINGING SIDWAYS.
6. TRUNK BENDING SIDWAYS. (HIPS FIRM.)
7. a. MARCHING IN TWOS AND FOURS.
- b. RUNNING GAME, *or* MARCHING ON THE TOES.
8. BREATHING (HIPS FIRM.)

COMMANDS.

- a. With deep breathing,
Arms forward and upward—*raise*.
Arms sideways and downward—*lower*.
- c. Hips—*firm*. Neck—*rest*.
(Attention.)



(Arms forward—*raise*.) Arms sideways—*swing*. Arms forward—*swing*. (Arms downward—*lower*.)

1. The first part of the report...

2. The second part of the report...

3. The third part of the report...

4. The fourth part of the report...

5. The fifth part of the report...

6. The sixth part of the report...

7. The seventh part of the report...

8. The eighth part of the report...

TABLE 10

EXERCISE	COMMENTS
1. Stand with feet shoulder width apart, arms at sides.	With deep breathing, arms forward and upward, then downward and backward.
2. Stand with feet shoulder width apart, arms at sides.	Biceps - Neck - (Attention)
3. Stand with feet shoulder width apart, arms at sides.	
4. Stand with feet shoulder width apart, arms at sides.	
5. Stand with feet shoulder width apart, arms at sides.	
6. Stand with feet shoulder width apart, arms at sides.	
7. Stand with feet shoulder width apart, arms at sides.	
8. Stand with feet shoulder width apart, arms at sides.	
9. Stand with feet shoulder width apart, arms at sides.	
10. Stand with feet shoulder width apart, arms at sides.	
11. Stand with feet shoulder width apart, arms at sides.	
12. Stand with feet shoulder width apart, arms at sides.	
13. Stand with feet shoulder width apart, arms at sides.	
14. Stand with feet shoulder width apart, arms at sides.	



TABLE 11.

EXERCISES.

COMMANDS.

1. *a.* BREATHING. ARM RAISING FORWARD AND PARTING.
- b.* HIPS FIRM AND NECK REST.
- c.* FEET ASTRIDE PLACING WITH HIPS FIRM.

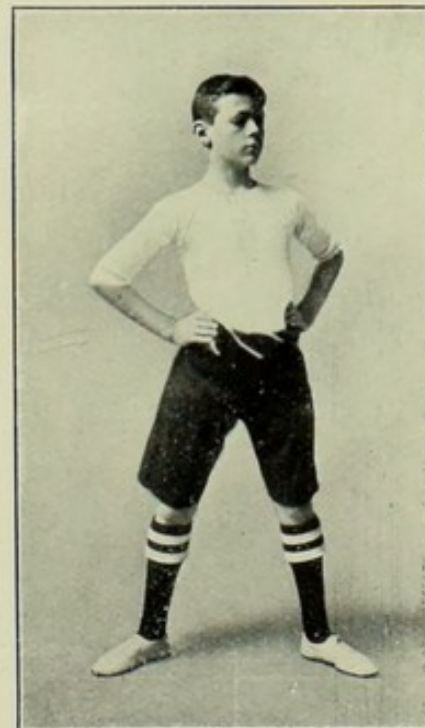
- c.* **With feet astride, hips—firm, 1, 2.**

(On 1, the left foot is moved to the side; on 2, the right foot is moved, the hands are simultaneously placed on the hips.)

- Feet and arms in position—place, 1, 2.**

(On 1, the left foot is brought back to position; on 2, the right foot is moved, the arms are dropped.)

2. *a.* TRUNK BENDING BACKWARD. (ARMS BEND.)
- b.* TRUNK BENDING FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD STRETCH.)
3. ARM STRETCHING FORWARD AND SIDWAYS.
4. HEEL RAISING. (NECK REST.)
5. ARM FLINGING. (ARMS ACROSS BEND.)
6. *TRUNK TURNING. (FEET ASTRIDE, HIPS FIRM.)



7. *a.* MARCHING. RUNNING.
- b.* UPWARD JUMP. (HIPS FIRM.)
- c.* GAME.

- b.* **Upward—jump, 1, 2, (3, 4), 5, 6.**

(On 1 and 2, the heels are raised and the knees bent; on (3, 4) the jump is made; on 5 and 6, the knees are stretched and the heels lowered.)

8. BREATHING. (HANDS ON CHEST.)

TABLE 12.

EXERCISES.

1. *a. HEAD TURNING. (HIPS FIRM.)

b. BREATHING. ARM RAISING
SIDWAYS.

c. FOOT PLACING SIDWAYS.
(HIPS FIRM.)

2. TRUNK BENDING FORWARD.
(ARMS BEND.)

3. ARM STRETCHING UPWARD AND
DOWNWARD.

4. HEEL RAISING. ALTERNATE
HIPS FIRM AND NECK REST.
(HIPS FIRM.)

5. ARM TURNING OUTWARD AND
INWARD.

6. a TRUNK TURNING. (ARMS
BEND.)

b. TRUNK BENDING SIDWAYS.
(FEET ASTRIDE, HIPS FIRM.)

7. a. MARCHING.

b. ASTRIDE JUMPING. (HIPS
FIRM.)

c. GAME.

8. BREATHING. (HIPS FIRM.)

COMMANDS.



Right foot sideways—*place*. Re-
cover—*place*.

Arms upward and downward—
stretch, 1, 2, 3, 4.

Heels—*raise*. Neck—*rest*.

Hips—*firm*. Heels—*lower*.

TABLE 13

EXPERIMENT

COMPARISONS

EXPERIMENT	No. of	With first class, each	With first open, type
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
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17.
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22.
23.
24.
25.
26.
27.
28.
29.
30.
31.
32.

TABLE 12

EXTREMES

GENERAL

1. No. 1000 (1000) (1000)

2. (1000) (1000) (1000)



3. (1000) (1000) (1000)

Right foot (1000) (1000)

4. (1000) (1000) (1000)

5. (1000) (1000) (1000)

Arms spread and downward (1000) (1000)

6. (1000) (1000) (1000)

Head (1000) (1000)
Hips (1000) (1000)

7. (1000) (1000) (1000)

8. (1000) (1000) (1000)

9. (1000) (1000) (1000)

10. (1000)

11. (1000) (1000) (1000)

12. (1000)

13. (1000) (1000) (1000)

TABLE 13.

EXERCISES.

COMMANDS.

1. a. BREATHING. (HANDS ON CHEST.)
 - *b. ALTERNATE NECK REST, HIPS FIRM, WITH FEET CLOSING AND OPENING.
 - c. ALTERNATE HEEL RAISING. (HIPS FIRM.)
2. a. HEAD BENDING BACKWARD. (ARMS BEND.)
 - b. TRUNK BENDING FORWARD. (HIPS FIRM.)
3. ARM STRETCHING SIDWAYS. HAND CLOSING AND OPENING.
4. HEEL RAISING. HEAD TURNING. (HIPS FIRM.)
5. ARM RAISING FORWARD AND SWINGING SIDWAYS.
6. TRUNK BENDING SIDWAYS. (FEET CLOSE, HIPS FIRM.)
7. a. MARCHING.
 - b. SLOW MARCH.
 - c. GAME or JUMPING.
8. BREATHING. ARM RAISING FORWARD AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.

- b. With feet close, neck—*rest*.
With feet open, hips—*firm*.



- (Arms sideways—*stretch*, 1, 2.)
Hands—*close*. Hands—*open*.
(Arms downward—*stretch*, 1, 2.)
- Heels—*raise*.
Head to the left (or right)
—*turn*.
Head forward—*turn*.
Heels—*lower*.
- b. Slow march left (right) foot—*begin*, 1, 2, 3, 4.
(On 1, the left foot is moved forward and the toe touches the ground; on 2, the left heel is lowered. On 3 and 4, these movements are repeated with the right foot.)
Class—*halt*, 1, 2.
(On 1, an ordinary marching step is taken with the left foot; on 2, the right foot is brought forward to Attention.)

TABLE 14.

EXERCISES.	COMMANDS.
<p>1. <i>a.</i> HEAD BENDING FORWARD. (FEET CLOSE, HIPS FIRM.)</p> <p><i>b.</i> BREATHING. ARM RAISING FORWARD AND PARTING.</p> <p><i>c.</i> FOOT PLACING OUTWARD. (HIPS FIRM.)</p> <p>2. <i>a.</i> TRUNK BENDING BACKWARD. (ARMS BEND.)</p> <p><i>*b.</i> TRUNK BENDING FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD STRETCH.)</p>	<p><i>c.</i> Feet full—<i>open</i>. Left (right) foot, outward—<i>place</i>. Recover—<i>place</i>.</p>
<p>3. ALTERNATE ARM STRETCHING UPWARD AND DOWNWARD.</p>	<p>(Arms upward—<i>bend</i>.) Right arm upward, left arm downward—<i>stretch</i>. Arms—<i>bend</i>. Left arm upward, right arm downward—<i>stretch</i>.</p>
<p>4. HEEL RAISING. (FEET ASTRIDE, ARMS BEND.)</p>	<p>Arms forward and upward—<i>raise</i>. Arms downward and backward—<i>swing</i>.</p>
<p>5. ARM RAISING FORWARD AND UPWARD, SWINGING DOWNWARD AND BACKWARD.</p>	
<p>6. TRUNK TURNING. (FEET ASTRIDE, ARMS BEND.)</p>	
<p>7. <i>a.</i> MARCHING. <i>b.</i> RUNNING <i>or</i> SKIPPING <i>or</i> JUMPING.</p>	
<p>8. BREATHING. (HIPS FIRM.)</p>	



EXHIBIT

1. The first part of the document is a list of names and addresses of the members of the committee.

2. The second part of the document is a list of the names and addresses of the members of the committee.

3. The third part of the document is a list of the names and addresses of the members of the committee.



4. The fourth part of the document is a list of the names and addresses of the members of the committee.

5. The fifth part of the document is a list of the names and addresses of the members of the committee.

6. The sixth part of the document is a list of the names and addresses of the members of the committee.

7. The seventh part of the document is a list of the names and addresses of the members of the committee.

8. The eighth part of the document is a list of the names and addresses of the members of the committee.

9. The ninth part of the document is a list of the names and addresses of the members of the committee.

10. The tenth part of the document is a list of the names and addresses of the members of the committee.

TABLE 15.

EXERCISES.

1. *a. FOOT PLACING OUTWARD.
(HIPS FIRM.)
- b. HEAD TURNING. (ARMS BEND.)
- c. BREATHING. ARM RAISING
SIDEWAYS.

2. TRUNK BENDING BACKWARD.
TRUNK BENDING FORWARD.
(FEET ASTRIDE. ARMS ACROSS
BEND.)

3. ARM STRETCHING UPWARD,
DOWNWARD, FORWARD AND
SIDEWAYS.

4. HEEL RAISING, KNEE BENDING.
(NECK REST.)

5. ARM FLINGING. (ARMS ACROSS
BEND.)

6. TRUNK BENDING SIDEWAYS.
(FEET CLOSE, ARMS BEND.)

7. a. MARCHING. RUNNING.
b. UPWARD JUMP *twice*. (HIPS
FIRM.)
c. GAME.

8. BREATHING. (HANDS ON CHEST.)

COMMANDS.



- Arms upward—*stretch*, 1, 2.
 Arms downward—*stretch*, 1, 2.
 Arms forward—*stretch*, 1, 2.
 Arms sideways—*stretch*, 1, 2.

- b. **Twice upward**—*jump*, 1, 2, (3, 4),
 (5, 6), 7, 8.
 (The first jump is taken on 3 and 4,
 the second on 5 and 6.)

TABLE 16.

EXERCISES.

1. a. BREATHING, ARM RAISING FORWARD AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.
- b. FEET CLOSING AND OPENING. (ARMS BEND.)
- c. HEAD BENDING BACKWARD. (HIPS FIRM.)
2. *TRUNK BENDING FORWARD. (FEET CLOSE, ARMS BEND.)
3. ALTERNATE ARM STRETCHING UPWARD AND DOWNWARD.

COMMANDS.



4. HEEL RAISING WITH ARM RAISING SIDWAYS. HAND CLOSING AND OPENING.
5. ARM RAISING FORWARD AND UPWARD, SWINGING DOWNWARD AND BACKWARD.
6. TRUNK TURNING. (FEET CLOSE, ARMS BEND.)
7. a. MARCHING. RUNNING.
b. CHANGE OF STEP MARCHING.
c. GAME.
8. BREATHING. (HIPS FIRM.)

(Heels and arms sideways—*raise*.)
Hand closing and opening by numbers—1, 2.
(Heels and arms downward—*lower*.)

b. With change of step, forward—*march*.
Class—*halt*, 1, 2.

TABLE 17.

EXERCISES.	COMMANDS.
<p>1. a. Marching with arms raised. (March.) b. Detachments. And march in column and company. c. March forward, backward and sideward.</p>	<p>With knee raising, march. (See Class Act. 1, 2.)</p>
<p>2. a. Arms sideward, forward, backward, and upward. b. Arms sideward, forward, backward, and upward, and sideward sideward.</p>	<p>Arms sideward and forward. (See Class Act. 1, 2, 3, 4.)</p>
<p>3. Arms sideward sideward and sideward.</p>	<p>Hips down. Feet full. (See Class Act.) (Left) Feet outward. Heels down. Feet down. (Recover) Feet straight.</p>
<p>4. Feet sideward. (Feet sideward march, with arms.)</p>	<p>Trunk to the right. (See Class Act.) Trunk upward. (See Class Act.)</p>
<p>5. Arms sideward sideward and sideward sideward.</p>	<p>Trunk to the left. (See Class Act.) Trunk upward. (See Class Act.) In all trunk movements, when in this position of the trunk, the trunk is to be held steady, the feet which it rests upon to be fixed, and the feet to be held straight.</p>
<p>6. Trunk sideward sideward. (Trunk sideward march, with arms.)</p>	
<p>7. a. Trunk sideward sideward. b. Trunk sideward sideward.</p>	<p>The children were prepared, but they were not allowed. For this reason, the eyes should only be raised a few inches from the floor.</p>
<p>8. Trunk sideward sideward sideward.</p>	

TABLE 16.

EXERCISES

COMMANDS

1. a. Position, Arms raised forward, 45° upward, elbows straight and downward.
- b. Feet raised and opened (Arms raised)
- c. Head raised backward (Arms raised)
2. *Feet raised backward (Arms raised, legs bent)
3. *Arms raised backward, elbows and downward.



4. Head raised with arms raised forward. Head raised and opened.
5. Arms raised with head raised, elbows downward and backward.
6. Feet raised, feet close, head bent.
7. a. Head raised backward
b. Elbows and arms raised
c. Feet raised
8. Head raised, arms bent

Head and arms raised - 1, 2, 3
Head closing and opening by numbers - 1, 2, 3
(Head and arms downward - 1, 2, 3)

With change of step, forward - 1, 2, 3
Head - 1, 2, 3, 4

TABLE 17.

EXERCISES.

1. a. MARKING TIME WITH KNEE RAISING. MARCHING.
b. BREATHING. ARM RAISING FORWARD AND PARTING.
c. HEAD BENDING BACKWARD AND FORWARD.
2. a. TRUNK BENDING FORWARD. (FEET ASTRIDE, HIPS FIRM.)
b. TRUNK BENDING FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD STRETCH.)
3. ARM STRETCHING SIDWAYS AND DOWNWARD.
4. HEEL RAISING. (FOOT OUTWARD PLACE, HIPS FIRM.)
5. ARM RAISING FORWARD AND SWINGING SIDWAYS.
6. *TRUNK BENDING SIDWAYS. (RIGHT HAND HIP FIRM, LEFT HAND NECK REST.)



7. a. SKIPPING or GAME.
b. JUMPING OVER A ROPE.
8. BREATHING, ARM RAISING SIDEWAYS.

COMMANDS.

With knee raising, mark—*time*.
Class—*halt*, 1, 2.

Arms sideways and downward—*stretch*, 1, 2, 3, 4.

(Hips—*firm*. Feet full—*open*. Right (Left) foot outward—*place*.)
Heels—*raise*. Heels—*lower*.
(Recover—*place*. Attention.)

Trunk to the right—*bend*. Trunk upward—*stretch*. Arms—*change*.
Trunk to the left—*bend*. Trunk upward—*stretch*. Arms—*change*.
(In all trunk movements taken from this position of the arms, the trunk is bent, or turned, towards the arm which is *lower*, that is in the Hip firm position.)

b. (The children may jump one, two, three or four abreast. For little children the rope should only be raised a few inches from the floor.)

TABLE 18.

EXERCISES.

1. a. HEAD TURNING. (ARMS BEND.)
b. BREATHING. (HANDS ON CHEST.)
*c. FOOT PLACING FORWARD. (HIPS FIRM.)
2. TRUNK BENDING BACKWARD.
TRUNK BENDING FORWARD.
(FEET ASTRIDE, ARMS ACROSS BEND.)
3. ARM STRETCHING UPWARD AND DOWNWARD. HAND CLOSING AND OPENING.
4. HEEL RAISING AND KNEE BENDING. ALTERNATE HIPS FIRM AND ARMS UPWARD BEND.
5. ARM FLINGING. (ARMS ACROSS BEND.)
6. a. TRUNK TURNING. (FEET ASTRIDE, ARMS BEND.)
b. TRUNK BENDING SIDWAYS. (FEET ASTRIDE, HIPS FIRM.)
7. a. MARCHING.
b. UPWARD JUMP, *or* GAME.
8. BREATHING. ARM RAISING FORWARD AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.

COMMANDS.

[Feet full—*open*.]
Right (left) foot forward—*place*.
Recover—*place*.



(Arms upward—*stretch*, 1, 2.)
Hands—*close*. Hands—*open*.
(Arms downward—*stretch*, 1, 2.)
(Hips—*firm*.)
Heels—*raise*. Knees—*bend*.
Arms—*bend*. Hips—*firm*.
Knees—*stretch*.
Heels—*lower*. (Attention.)

TABLE 18

EXERCISES

CONCEPTS

1. A. [Faint text]
- B. [Faint text]
- C. [Faint text]
2. A. [Faint text]
- B. [Faint text]
- C. [Faint text]
3. A. [Faint text]
- B. [Faint text]
- C. [Faint text]
4. [Faint text]
5. A. [Faint text]
- B. [Faint text]
- C. [Faint text]
6. [Faint text]
7. A. [Faint text]
- B. [Faint text]
- C. [Faint text]

[Faint text in the right column, possibly a list of concepts or definitions corresponding to the exercises.]



TABLE 18.

EXERCISES	COMMENTS
1. a. Hand raised (above head) b. Dumbbells (above head) c. Feet raised (above head)	(Feet full) Right left foot forward - push Recover
2. Torso backward - backward Torso forward - forward (Feet raised, arms across)	
3. Arms stretching up and downward. Hand raised up and down.	Arms upward - push 1, 2 Hands down. Hands down Arms downward - push 1, 2 Hips - push Heels - push. Knees and Arms - push. Hips - push Heels - push. Attention.
4. Arms raised (arms across)	
5. a. Torso raised (feet raised, arms down)	
6. Torso raised (feet raised, arms down)	
7. a. Torso raised	
b. Torso raised (feet raised, arms down)	
8. Torso raised (feet raised, arms down)	



TABLE 19.

EXERCISES.

COMMANDS.

1. a. ALTERNATE HIPS FIRM, NECK REST WITH FEET CLOSING AND OPENING.
 b. BREATHING. (HIPS FIRM.)
 c. ARM TURNING OUTWARD AND INWARD.
2. a. TRUNK BENDING BACKWARD. (ARMS BEND.)
 b. TRUNK BENDING FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD STRETCH)
3. ARM STRETCHING FORWARD AND DOWNWARD.
4. HEEL RAISING. (FEET ASTRIDE, NECK REST.)
5. ARM RAISING FORWARD AND UPWARD, SWINGING FORWARD AND SIDWAYS.
6. TRUNK TURNING. (ARMS ACROSS BEND.)
7. a. MARCHING, RUNNING.
 *b. CHANGE OF STEP MARCHING.
 c. SKIPPING or GAME.

Arms forward and downward--
stretch, 1, 2, 3, 4.

(Arms forward and upward—*raise.*)
 Arms forward and sideways—*swing.*
 Arms forward and upward—*swing.*
 (Arms forward and downward—*lower.*)



8. BREATHING. ARM RAISING FORWARD AND PARTING.

TABLE 20.

EXERCISES.

1. *a.* HEAD BENDING BACKWARD.
(HIPS FIRM.)
b. FEET ASTRIDE PLACING WITH
ARM STRETCHING SIDWAYS.
c. BREATHING. (HANDS ON
CHEST.)
2. TRUNK BENDING BACKWARD.
TRUNK BENDING FORWARD.
(ARMS BEND.)
3. ALTERNATE ARM STRETCHING
UPWARD AND DOWNWARD.
4. HEEL RAISING AND KNEE
BENDING. (ARMS ACROSS
BEND.)
5. ARM FLINGING (ARMS ACROSS
BEND.)
6. TRUNK BENDING SIDWAYS.
(FEET ASTRIDE, HIPS FIRM.)
7. *a.* MARCHING.
**b.* HOP MARCH WITH KNEE RAIS-
ING. (HANDS ON HIPS.)
c. JUMPING *or* GAME.

COMMANDS.

- b.* (Hands on hips—*place.*)
Hop march, with knee raising
—*begin.*
(Class—*halt, 1, 2.*)



8. BREATHING. ARM RAISING SIDE-
WAYS.

TABLE 11

EXERCISES	COMMENTS
<p>1. A. Start with the arms down.</p> <p>B. Raise the arms sideways. Add weight shoulders and wrists. Contract biceps and forearms.</p>	<p>With deep breathing, arms sideways and upward - low. Arms sideways and downward - low.</p>
<p>2. A. Arms raised sideways (feet close together)</p> <p>B. Arms raised forward and backward - feet apart, arms spread wide.</p>	<p>Arms upward - low, 1, 2 Repeat 1, 2 Arms downward - low, 1, 2 Repeat 1, 2</p>
<p>3. Arms raised and bent at elbows, feet together, arms spread, lower arms</p>	<p>Arms upward - low, feet together, lower arms side ways - low, arms close together - low, feet apart, arms downward - low, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100</p>
<p>4. Arms raised sideways and upward, feet together, arms spread</p>	
<p>5. A. Arms raised sideways (feet close together)</p>	
<p>B. Arms raised forward and backward</p>	
<p>6. Arms raised low</p>	
<p>7. Arms raised low</p>	



TABLE 20.

EXERCISES	COMMENTS
1. a. March, stepping, marching (left foot) b. Feet together, placing with arms extended sideways c. Position (Hands on hips)	
2. Feet together, marching Feet together, marching (left foot)	
3. Attention, arm extended forward and down	
4. Feet together, arm down attention, arm down march	
5. Arm forward, march across room	
6. Feet together, marching Feet together, march	
7. a. Attention b. Hop march with arms extended forward c. Attention to feet	(Hands on hips - hop) Hop march, with knee raising (Class - Sept. 1, 21)



8. Attention, arm extended
 forward

TABLE 21.

EXERCISES.

1. a. ALTERNATE TOE RAISING.
(HIPS FIRM.)
b. MARKING TIME. MARCHING.
c. BREATHING. ARM RAISING
SIDEWAYS AND UPWARD,
LOWERING SIDEWAYS AND
DOWNWARD.
2. a. TRUNK BENDING FORWARD.
(FEET CLOSE, HIPS FIRM.)
b. TRUNK BENDING FORWARD
AND DOWNWARD. (FEET
ASTRIDE, ARMS UPWARD
STRETCH.)
3. ARM STRETCHING UPWARD AND
DOWNWARD, *twice*.
4. *HEEL RAISING AND KNEE BEND-
ING. ARM STRETCHING SIDE-
WAYS, *once*. (ARMS BEND.)
5. ARM RAISING FORWARD AND UP-
WARD, SWINGING DOWNWARD
AND BACKWARD.
6. a. TRUNK TURNING. (FEET
CLOSE, HIPS FIRM.)
b. TRUNK BENDING SIDEWAYS.
(HIPS FIRM.)
7. a. SKIPPING *or* GAME.
b. ASTRIDE JUMPING.
8. BREATHING. (ATTENTION.)

COMMANDS.

- c. With deep breathing, arms
sideways and upward—*raise*.
Arms sideways and downward
—*lower*.

Arms upward—*stretch*, 1, 2.

Repeat—1, 2.

Arms downward—*stretch*, 1, 2.

Repeat—1, 2.

(Arms upward—*bend*.) Heels—
raise. Knees—*bend*. Arms side-
ways—*stretch*. Arms—*bend*.
Knees—*stretch*. Heels—*lower*.
(Arms downward—*stretch*.)

(This exercise must be repeated as a
whole, the arms being stretched
once only while the knees are
bent.)

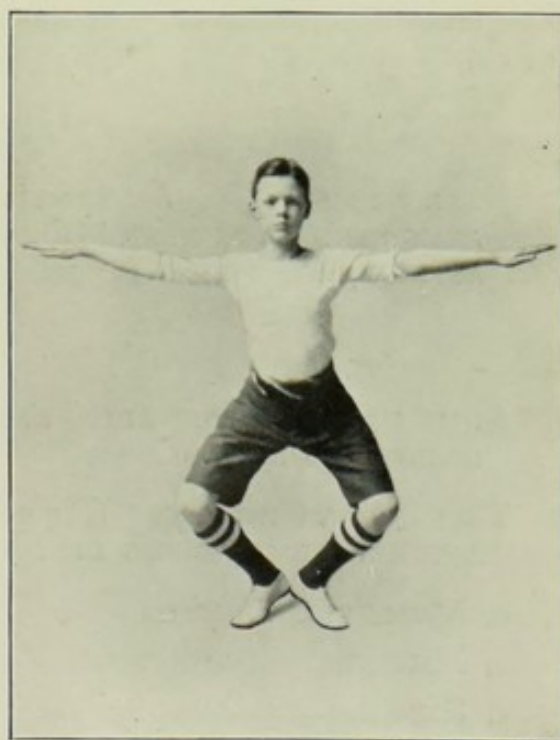


TABLE 22.

EXERCISES.

1. a. FOOT PLACING FORWARD.
(HIPS FIRM.)
- b. BREATHING. (HANDS ON CHEST.)
- *c. HEAD BENDING BACKWARD AND FORWARD. (HIPS FIRM.)

2. TRUNK BENDING BACKWARD.
TRUNK BENDING FORWARD.
(FEET ASTRIDE, ARMS BEND.)

3. ARM STRETCHING UPWARD AND
SIDWAYS. HAND CLOSING
AND OPENING.

4. HEEL RAISING. ALTERNATE
ARMS BEND, NECK REST. (FEET
ASTRIDE, ARMS BEND.)

5. ARM RAISING FORWARD AND
SWINGING SIDWAYS.

6. TRUNK TURNING. (FEET
ASTRIDE, ARMS ACROSS BEND.)

7. a. MARCHING. JUMPING.
b. MARCHING ON THE TOES.
c. RUNNING *or* GAME.

8. BREATHING. (HIPS FIRM.)

COMMANDS.



- Arms upward—*stretch*, 1, 2.
Hands—*close*. Hands—*open*.
Arms sideways—*stretch*, 1, 2.
Hands—*close*. Hands—*open*.
(Arms downward—*stretch*, 1, 2.)
- (With feet astride, arms upward—
bend, 1, 2.)
Heels—*raise*. Neck—*rest*.
Arms—*bend*. Heels—*lower*.
Feet and arms in position—*place*,
1, 2.)

TABLE 10

RESULTS

DISCUSSION

- 1. The first group of results shows that the average value of the parameter α is approximately 0.5, which is in good agreement with the theoretical prediction.
- 2. The second group of results shows that the average value of the parameter β is approximately 0.2, which is also in good agreement with the theoretical prediction.
- 3. The third group of results shows that the average value of the parameter γ is approximately 0.1, which is also in good agreement with the theoretical prediction.
- 4. The fourth group of results shows that the average value of the parameter δ is approximately 0.05, which is also in good agreement with the theoretical prediction.



- 5. The fifth group of results shows that the average value of the parameter ϵ is approximately 0.02, which is also in good agreement with the theoretical prediction.
- 6. The sixth group of results shows that the average value of the parameter ζ is approximately 0.01, which is also in good agreement with the theoretical prediction.
- 7. The seventh group of results shows that the average value of the parameter η is approximately 0.005, which is also in good agreement with the theoretical prediction.
- 8. The eighth group of results shows that the average value of the parameter θ is approximately 0.002, which is also in good agreement with the theoretical prediction.

The above results show that the parameters $\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta$ are all in good agreement with the theoretical predictions. This indicates that the model used in this study is a good approximation of the actual system.

TABLE 22

EXERCISES

DETAILS

1. To the right, forward, upward, downward.
2. To the left, forward, upward, downward.
3. To the right, forward, upward, downward, backward, upward, forward.



4. To the right, forward, upward, downward, backward, upward, forward.
5. To the left, forward, upward, downward, backward, upward, forward.
6. To the right, forward, upward, downward, backward, upward, forward, backward, upward, forward.
7. To the left, forward, upward, downward, backward, upward, forward, backward, upward, forward.
8. To the right, forward, upward, downward, backward, upward, forward, backward, upward, forward, backward, upward, forward.
9. To the left, forward, upward, downward, backward, upward, forward, backward, upward, forward, backward, upward, forward.
10. To the right, forward, upward, downward, backward, upward, forward, backward, upward, forward, backward, upward, forward, backward, upward, forward.
11. To the left, forward, upward, downward, backward, upward, forward, backward, upward, forward, backward, upward, forward, backward, upward, forward.
12. To the right, forward, upward, downward, backward, upward, forward, backward, upward, forward, backward, upward, forward, backward, upward, forward, backward, upward, forward.
13. To the left, forward, upward, downward, backward, upward, forward, backward, upward, forward, backward, upward, forward, backward, upward, forward, backward, upward, forward.
14. To the right, forward, upward, downward, backward, upward, forward, backward, upward, forward, backward, upward, forward, backward, upward, forward, backward, upward, forward, backward, upward, forward.
15. To the left, forward, upward, downward, backward, upward, forward, backward, upward, forward, backward, upward, forward, backward, upward, forward, backward, upward, forward, backward, upward, forward.

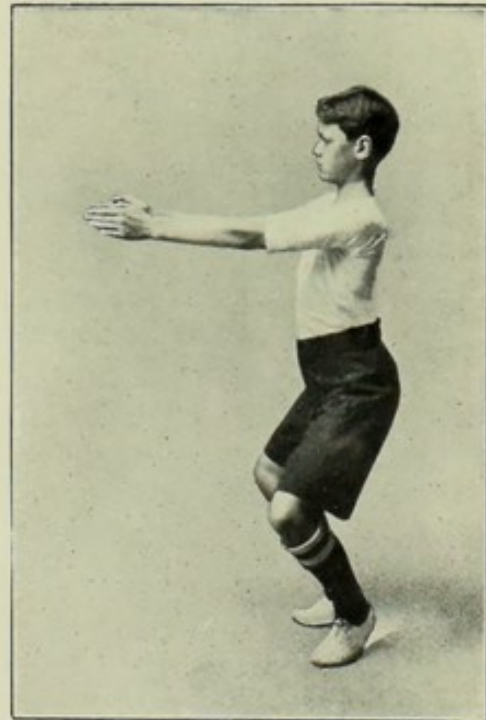
Arms upward, with 1, 2.
 Hands down, Hands up.
 Arms sideways, with 1, 2.
 Hands down, Hands up.
 Arms downward, with 1, 2.
 With feet astride, arms upward, with 1, 2.
 Back down, Neck up.
 Arms down, Hands up.
 Feet and arms in position, with 1, 2.

TABLE 23.

EXERCISES.

COMMANDS.

1. a. BREATHING. ARM RAISING FORWARD AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.
- b. HEAD TURNING.
- c. FOOT PLACING OUTWARD. (HIPS FIRM.)
2. TRUNK BENDING FORWARD. TRUNK BENDING BACKWARD. (FEET ASTRIDE, ARMS BEND.)
3. ARM STRETCHING UPWARD, FORWARD, SIDWAYS AND DOWNWARD.
4. *HEEL RAISING AND KNEE BENDING. ARM STRETCHING FORWARD, *once*.



5. ARM FLINGING. (ARMS ACROSS BEND, TRUNK FORWARD BEND.)
6. TRUNK BENDING SIDWAYS. (ARMS ACROSS BEND.)
7. a. MARCHING.
- b. HOP MARCH *or* SKIPPING *or* GAME.
8. BREATHING. ARM RAISING SIDEWAYS.

(Arms across—*bend*. Trunk forward—*bend*.)
 Arms—*fling*. Arms—*bend*.
 (Trunk upward—*stretch*. Attention.)

TABLE 24.

EXERCISES.

1. a. MARKING TIME WITH KNEE RAISING. MARCHING.
b. HEAD BENDING BACKWARD. (FEET ASTRIDE. HIPS FIRM.)
c. BREATHING. (HANDS ON CHEST.)
2. a. TRUNK BENDING BACKWARD. (FEET CLOSE, HIPS FIRM.)
b. TRUNK BENDING FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD STRETCH.)
3. ARM STRETCHING FORWARD AND SIDWAYS (*twice*).
4. HEEL RAISING AND KNEE BENDING. ALTERNATE HIPS FIRM AND ARMS UPWARD BEND.
5. ARM RAISING FORWARD AND UPWARD, SWINGING DOWNWARD AND BACKWARD.
6. TRUNK TURNING. (RIGHT HAND HIP FIRM, LEFT HAND NECK REST.)
7. a. SKIPPING *or* GAME.
b. UPWARD JUMP, *twice*. (HIPS FIRM.)
8. *BREATHING. ARM RAISING FORWARD AND PARTING.

COMMANDS.

- b. (With feet astride, Hips—*firm*, 1, 2.)
Head backward—*bend*.
Head upward—*stretch*.
(Feet and Arms in position—*place*, 1, 2.)

Arms forward—*stretch*, 1, 2.

Repeat—1, 2.

Arms sideways—*stretch*, 1, 2.

Repeat—1, 2.

(Arms downward—*stretch*, 1, 2.)

Trunk to the right—*turn*. Trunk forward—*turn*. Arms—*change*.
Trunk to the left—*turn*. Trunk forward—*turn*.



NOTES ON THE TABLES IN SERIES B

(For Tables 10 to 15, inclusive)

This Series contains the corrected values of $\log \Gamma(x)$ for x ranging from 0.5 to 1.5, and $\log \Gamma(x)$ for x ranging from 1.5 to 2.5.

These functions may be expressed in the following forms, which give the general principle of construction of the tables:

$\log \Gamma(x) = \log \Gamma(x) - \log \Gamma(x) + \log \Gamma(x)$
The first term is the logarithm of the gamma function, the second term is the logarithm of the factorial function, and the third term is the logarithm of the gamma function. The first term is the logarithm of the gamma function, the second term is the logarithm of the factorial function, and the third term is the logarithm of the gamma function.

The first term is the logarithm of the gamma function, the second term is the logarithm of the factorial function, and the third term is the logarithm of the gamma function. The first term is the logarithm of the gamma function, the second term is the logarithm of the factorial function, and the third term is the logarithm of the gamma function.

TABLE 24

EXERCISES

CONSTANTS

1. a. Head to the right - eyes forward - feet forward.
- b. Head to the left - eyes forward - feet forward.
2. a. Head to the right - eyes to the right - feet forward.
- b. Head to the left - eyes to the left - feet forward.
3. a. Head to the right - eyes forward - feet to the right.
- b. Head to the left - eyes forward - feet to the left.
4. Head to the right - eyes to the right - feet to the right.
5. Head to the left - eyes to the left - feet to the left.
6. Head to the right - eyes forward - feet to the right.
7. Head to the left - eyes forward - feet to the left.
8. Head to the right - eyes to the right - feet to the right.
9. Head to the left - eyes to the left - feet to the left.

With feet outside hips - (see p. 1, 2)
 Head backward - feet forward
 Head upward - feet forward
 Feet and arms in position - (see p. 1, 2)

Arms forward - (see p. 1, 2)
 Arms to the right - (see p. 1, 2)
 Arms to the left - (see p. 1, 2)
 Arms downward - (see p. 1, 2)

Trunk to the right - (see p. 1, 2)
 Trunk forward - (see p. 1, 2)
 Trunk to the left - (see p. 1, 2)
 Trunk upward - (see p. 1, 2)



NOTES ON THE TABLES IN SERIES B.

(For Children aged 9-11 years.)

This Series contains the second set of 24 Tables. Tables 25-36 may be used in Standard III., and Tables 37-48 in Standard IV.

Order Movements must be given as in the preceding Tables, but greater precision and smartness of execution should be required.

Breathing Exercises may be varied at the discretion of the teacher, and Marching, Jumping, Running and Dancing Exercises from Series A may be introduced if desired. Games should also be taken frequently. Skipping exercises are described in Appendix A.

N.B.—Any Tables or Exercises from Series A with which the class is not already familiar should be taught before proceeding with Series B, and the teacher should read the General Introduction to the Tables of Exercises.

TABLE 25.

EXERCISES.

1. *a.* ARM TURNING OUTWARD AND INWARD.
- b.* BREATHING. ARM RAISING SIDWAYS.
- **c.* FOOT PLACING OUTWARD. HEEL RAISING. (HIPS FIRM.)

2. TRUNK BENDING BACKWARD AND FORWARD. (FEET ASTRIDE, ARMS BEND.)

3. ARM STRETCHING UPWARD, SIDEWAYS AND DOWNWARD. HAND CLOSING AND OPENING.

4. HEEL RAISING AND KNEE BENDING. ARM STRETCHING UPWARD. (ARMS BEND.)

5. ARM RAISING FORWARD AND UPWARD, AND PARTING.

6. TRUNK BENDING SIDWAYS. (FEET ASTRIDE, HIPS FIRM.)

7. *a.* MARCHING. RUNNING.
b. CHANGE OF STEP MARCHING.
c. GAME.

8. BREATHING. (HANDS ON CHEST.)

COMMANDS.

- c.* (Feet full—open.)
Left (right) foot outward—place.
Heels—raise. Heels—lower. Feet—change, 1, 2. Heels—raise. Heels—lower. (Recover—place.)
 (Feet change. On 1, the left foot is brought back to position; on 2, the right foot is placed outward.)



- (Arms forward and upward—raise.)
Arm parting by numbers—1, 2.
(Arms forward and downward—lower.)
 (On 1, the arms are lowered to the level of the shoulders, with the palms turned upward; on 2, the arms are brought back to the upward raise position.)

TABLE 10

EXERCISES

QUESTIONS

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

...



4. ...
5. ...
6. ...
7. ...
8. ...

...

TABLE 20.

EXERCISES.

COMMENTS.

1. a. Arms raised in front and down.
- b. Forward. Arms raised upward.
- c. Feet raised, arms up. Head raised (Hollow).

d. Feet full - one
 Left (right) foot outward - pull
 Body - one. Heels - one. Feet
 - one. L. S. Heels - one.
 Heels - one. (Hollow) - one.
 - one. Feet - one. Feet - one.
 - one. Feet - one. Feet - one.
 - one. Feet - one. Feet - one.

2. Feet raised, arms up. Head raised (Hollow).
3. Feet raised, arms up. Head raised (Hollow).
4. Feet raised, arms up. Head raised (Hollow).



5. Feet raised, arms up. Head raised (Hollow).
6. Feet raised, arms up. Head raised (Hollow).
7. Feet raised, arms up. Head raised (Hollow).
8. Feet raised, arms up. Head raised (Hollow).

(Arms forward and upward - one)
 Arms raised by numbers - 1, 2.
 (Arms forward and downward - one)
 - one. Feet - one. Feet - one.
 - one. Feet - one. Feet - one.
 - one. Feet - one. Feet - one.
 - one. Feet - one. Feet - one.

TABLE 26.

EXERCISES.

COMMANDS.

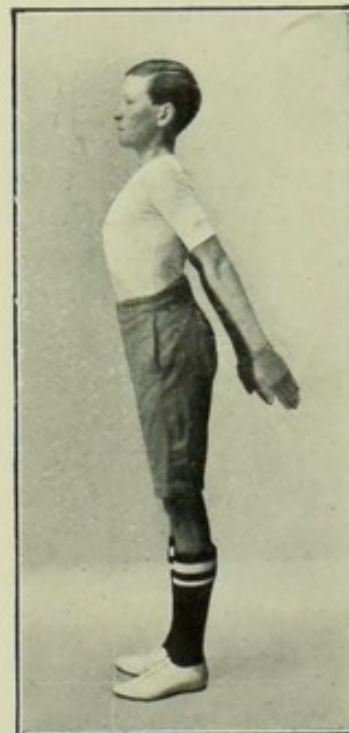
1. a. BREATHING. ARM RAISING
SIDWAYS AND UPWARD,
LOWERING SIDWAYS AND
DOWNWARD.
- b. HEAD BENDING BACKWARD
AND FORWARD. (HIPS FIRM.)
- c. FOOT PLACING FORWARD.
(HIPS FIRM.)

- c. (Right foot forward — place.)
Feet—change, 1, 2. (Recover—
place.)

2. a. TRUNK BENDING BACKWARD.
(FEET ASTRIDE, ARMS
ACROSS BEND.)

- b. TRUNK BENDING FORWARD
AND DOWNWARD. (FEET
ASTRIDE, ARMS UPWARD
STRETCH.)

3. *ARM STRETCHING BACKWARD
AND UPWARD.



4. HEEL RAISING. HEAD TURNING.
(HIPS FIRM.)
5. ARM RAISING FORWARD AND
PARTING. (TRUNK FORWARD
BEND.)
6. TRUNK TURNING. (ARMS ACROSS
BEND.)
7. a. MARCHING.
b. ASTRIDE JUMPING, WITH ARM
RAISING SIDWAYS.
c. GAME.
8. BREATHING. (ATTENTION.)

- Heels—raise. Head to the right—
turn. Head forward—turn.
Head to the left—turn. Head
forward—turn. Heels—lower.

- b. Heels—raise. With arm raising
sideways, astride jumping—
begin, 1, 2. Class—halt, 1, 2. Heels
—lower.

(On 1, the feet take the astride posi-
tion on the toes and the arms are
raised to the shoulder line; on 2,
the heels come together and the
arms are lowered.)

TABLE 27.

EXERCISES.

1. a. HEAD TURNING. (FEET CLOSE, ARMS BEND.)
b. FOOT PLACING SIDWAYS. (HIPS FIRM.)
c. BREATHING. (HANDS ON CHEST.)
2. TRUNK BENDING BACKWARD AND FORWARD. (ARMS BEND.)
3. ALTERNATE ARM STRETCHING UPWARD AND SIDWAYS.
4. HEEL RAISING AND KNEE BENDING. ARM STRETCHING SIDWAYS, *twice*. (ARMS BEND.)
5. ARM RAISING FORWARD AND UPWARD, SWINGING FORWARD AND SIDWAYS
6. a. TRUNK TURNING. (FEET CLOSE, HIPS FIRM.)
b. TRUNK BENDING SIDWAYS. (FEET ASTRIDE, ARMS BEND.)
7. a. MARCHING.
*b. HOP MARCH WITH LEG RAISED BACKWARD. (HANDS ON HIPS.)
c. GAME *or* SKIPPING.

COMMANDS.

- b. (Left foot sideways—*place*.) Feet change, 1, 2. (Recover—*place*.)

(Arms upward—*bend*.) Left arm upward, right arm sideways—*stretch*. Arms—*bend*. Left arm sideways, right arm upward—*stretch*. Arms—*bend*. (Arms downward—*stretch*.)

(The arms are to be stretched sideways twice while the knees remain bent.)

- b. Hop march with leg raised backward—*begin*.
Class—*halt*, 1, 2.



8. BREATHING. (ATTENTION.)

TABLE 11

EXERCISES

COMMENTS

- 1. a. Feet together, arms at sides, hands straight down.
- b. Feet together, arms at sides, hands straight down.
- c. Feet together, arms at sides, hands straight down.
- d. Feet together, arms at sides, hands straight down.

With feet together, arms at sides, hands straight down.



- 2. a. Feet together, arms at sides, hands straight down.
- b. Feet together, arms at sides, hands straight down.
- c. Feet together, arms at sides, hands straight down.
- d. Feet together, arms at sides, hands straight down.

- 3. Feet together, arms at sides, hands straight down.

- 4. Feet together, arms at sides, hands straight down.

With feet together, arms at sides, hands straight down.

- 5. Feet together, arms at sides, hands straight down.

- 6. Feet together, arms at sides, hands straight down.

With feet together, arms at sides, hands straight down.

- 7. Feet together, arms at sides, hands straight down.

- 8. Feet together, arms at sides, hands straight down.

With feet together, arms at sides, hands straight down.

TABLE 28.

EXERCISES.

COMMANDS.

1. a. FOOT PLACING FORWARD.
HEEL RAISING. (HIPS FIRM.)
- b. BREATHING. ARM TURNING
OUTWARD AND INWARD.
- c. MARKING TIME WITH KNEE
RAISING. MARCHING.

- b. With deep breathing, arms out-
ward and inward—*turn, 1—2.*

2. a. TRUNK BENDING BACKWARD.
(HIPS FIRM.)
- b. TRUNK BENDING FORWARD
AND DOWNWARD. (FEET
ASTRIDE, ARMS UPWARD
STRETCH.)

3. ARM STRETCHING SIDWAYS AND
DOWNWARD, *twice.*

4. HEEL RAISING AND KNEE
BENDING. HEAD TURNING.
(HIPS FIRM.)

5. ARM FLINGING. (ARMS ACROSS
BEND, TRUNK FORWARD BEND.)

6. *TRUNK TURNING. RIGHT HAND
NECK REST, LEFT ARM BEND.)

7. a. SKIPPING *or* JUMPING.

- b. RUNNING MAZE.

8. BREATHING. (HIPS FIRM.)



Heels—*raise.* Knees—*bend.* Head
to the left—*turn.* Head forward
—*turn.* Head to the right—*turn.*
Head forward—*turn.* Knees—
stretch. Heels—*lower.*

Trunk to the left—*turn.* Trunk
forward—*turn.* Arms—*change.*
Trunk to the right—*turn.* Trunk
forward—*turn.*

(In all trunk movements taken from
this position of the arms, the trunk
is bent or turned to the side of the
arm which is lower, that is in the
Arms bend position.)

TABLE 29.

EXERCISES.

1. a. BREATHING. (ATTENTION.)
- *b. FOOT PLACING SIDEWAYS.
(HIPS FIRM.)
- c. HEAD BENDING BACKWARD.
2. TRUNK BENDING BACKWARD AND FORWARD. (FEET ASTRIDE, ARMS ACROSS BEND.)
3. ARM STRETCHING UPWARD, FORWARD AND DOWNWARD. HAND CLOSING AND OPENING.
4. HEEL RAISING, ARM STRETCHING SIDEWAYS AND UPWARD. (ARMS BEND.)
5. ARM RAISING SIDEWAYS AND UPWARD AND PARTING.
6. TRUNK TURNING. (NECK REST.)
7. a. MARCHING. RUNNING.
- b. UPWARD JUMP WITH ARM FLINGING. (ARMS ACROSS BEND.)
8. BREATHING. ARM RAISING SIDEWAYS.

COMMANDS.

- b. Right foot sideways—*place*.
Feet—*change, 1, 2.*
Feet and arms—*Attention.*

(The last command is given, instead of the two commands, "recover" for the feet, and "attention" for the arms; the foot and arms are thus brought back to position in one movement instead of two.)



- Heels**—*raise.*
Arms sideways and upward—*stretch, 1, 2, 3, 4.* **Heels**—*lower.*

- b. **With arm flinging, upward**—*jump, 1, 2, (3, 4), 5, 6.*
 (The arm flinging is taken with the jump on 3 and 4.)

TABLE III

EXERCISES

- 1. ...
- 2. ...
- 3. ...
- 4. ...
- 5. ...
- 6. ...
- 7. ...
- 8. ...
- 9. ...
- 10. ...



- 11. ...
- 12. ...
- 13. ...
- 14. ...
- 15. ...

TABLE 20

FINDINGS

DISCUSSION

1. The subject was a male...

2. The subject was a male...

3. The subject was a male...

4. The subject was a male...

5. The subject was a male...

6. The subject was a male...

7. The subject was a male...

8. The subject was a male...

9. The subject was a male...

10. The subject was a male...

11. The subject was a male...

1. Right foot always...
 Foot...
 Feet and arms...

2. The subject was a male...



Back...
 Arms always and upward...
 Head...

With arms flaring upward...
 Head...
 The subject was a male...

TABLE 30.

EXERCISES.

1. a. FOOT PLACING FORWARD, (HIPS FIRM.)
 b. BREATHING. ARM RAISING FORWARD AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.
 c. HEAD BENDING BACKWARD AND FORWARD. (HIPS FIRM.)
2. a. TRUNK BENDING FORWARD. (ARMS ACROSS BEND.)
 b. TRUNK BENDING FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD STRETCH.)
3. ALTERNATE ARM STRETCHING UPWARD AND FORWARD.
4. *a. TOE SUPPORT PLACING OUTWARD. (HIPS FIRM.)
 b. HEEL RAISING AND KNEE BENDING. ARM STRETCHING SIDWAYS *twice*. (ARMS BEND.)

COMMANDS.

a. (Left foot forward—*place*)
 Feet—*change, 1, 2.* (Feet and arms—*Attention.*)

a. Right (left) foot outward on the toe—*place.*
 Recover—*place.*



5. ARM RAISING FORWARD AND FLINGING UPWARD.
6. TRUNK BENDING SIDWAYS. (FEET ASTRIDE, RIGHT HAND HIP FIRM, LEFT ARM BEND.)
7. a. MARCHING.
 b. ASTRIDE JUMPING WITH ARM RAISING SIDWAYS.
 c. GAME.
8. BREATHING. (ATTENTION.)

Arms forward—*raise.* Arms upward—*fling.* Arms forward and downward—*lower.*
 Trunk to the right—*bend.* Trunk upward—*stretch.* Arms *change—*
 Trunk to the left—*bend.* Trunk upward—*stretch.*

TABLE 31.

EXERCISES.

1. *a.* BREATHING. ARM RAISING FORWARD, AND PARTING.
- *b.* HEAD BENDING BACKWARD, WITH ARM TURNING OUTWARD AND INWARD.
- c.* TOE SUPPORT PLACING FORWARD. (HIPS FIRM.)
2. TRUNK BENDING BACKWARD AND FORWARD. (FEET ASTRIDE, NECK REST.)
3. ARM STRETCHING BACKWARD AND UPWARD.
4. HEEL RAISING. ARM FLINGING. (ARMS ACROSS BEND.)
5. ARM RAISING FORWARD AND UPWARD, SWINGING FORWARD AND SIDWAYS.
6. TRUNK TURNING. (FEET CLOSE, NECK REST.)
7. *a.* MARCHING.
b. RUNNING MAZE, *or* GAME.
8. BREATHING. (HANDS ON CHEST.)

COMMANDS.

- b.* With arm turning outward, head backward—*bend*.
With arm turning inward, head upward—*stretch*.



- c.* Left foot forward on the toe—*place*. Recover—*place*.

(Heels—*raise*.) Arms—*fling*. Arms—*bend*.
(Heels—*lower*.)

TABLE 32

EXERCISES

COMMANDS

- 1. Stand with feet apart, arms at sides.
- 2. Turn right, march forward.
- 3. Turn left, march forward.
- 4. Turn right, march forward.
- 5. Turn left, march forward.
- 6. Turn right, march forward.
- 7. Turn left, march forward.
- 8. Turn right, march forward.
- 9. Turn left, march forward.
- 10. Turn right, march forward.

- Head to the right—march
- Head upward—march
- Head to the left—march
- Head upward—march
- Arms upward, forward and downward—march 1, 2, 3, 4, 5, 6
- Right (left) foot backward on the line—march Recover—place
- (With feet close, arms across—march)
- Trunk forward—march
- Arms—down Arms—up
- Trunk upward—march Feet and arms in position—place
- Trunk to the left—march Trunk upward—march Arms—down
- Trunk to the right—march
- Forward—march 1, 2, 3, 4, 5, 6
- Trunk and arms—down
- Trunk and arms—up



- 11. Turn right, march forward.
- 12. Turn left, march forward.
- 13. Turn right, march forward.
- 14. Turn left, march forward.
- 15. Turn right, march forward.
- 16. Turn left, march forward.
- 17. Turn right, march forward.
- 18. Turn left, march forward.
- 19. Turn right, march forward.
- 20. Turn left, march forward.

TABLE 31.

EXERCISES

COMMANDS

1. At attention. Feet together, arms straight down.

2. Head turned right, arms straight down, feet together.

With arm turning outward head backward - *back*
With arm turning inward head upward - *front*



3. The right arm raised and held. (Right hand)

Left foot forward in the toe - *March* - *March* - *front*

4. Head turned right, arms straight down, feet together.

5. Head turned left, arms straight down, feet together.

6. The right arm raised and held. (Right hand)

Head - *right* / Arms - *front* - *front*
Head - *left*

7. Head turned right, arms straight down, feet together.

8. Head turned left, arms straight down, feet together.

9. At attention.

10. At attention.

TABLE 32.

EXERCISES.

1. a. MARKING TIME WITH KNEE RAISING. MARCHING.
 b. HEAD BENDING SIDWAYS. (HIPS FIRM.)
 c. BREATHING. ARM RAISING SIDWAYS.
2. a. TRUNK BENDING BACKWARD. (ARMS BEND.)
 b. TRUNK BENDING FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD STRETCH.)
3. ARM STRETCHING UPWARD, FORWARD AND DOWNWARD.
4. TOE SUPPORT PLACING BACKWARD. (HIPS FIRM.)
5. *ARM FLINGING. (FEET CLOSE, ARMS ACROSS BEND, TRUNK FORWARD BEND.)



6. TRUNK BENDING SIDWAYS. (FEET ASTRIDE. RIGHT ARM UPWARD, LEFT ARM DOWNWARD STRETCH.)
7. a. FORWARD JUMP. (HIPS FIRM.)
 b. HOP MARCH *or* SKIPPING.
8. BREATHING. (ATTENTION.)

COMMANDS.

- b. Head to the right—*bend*.
 Head upward—*stretch*.
 Head to the left—*bend*.
 Head upward—*stretch*.

Arms upward, forward and downward—*stretch*, 1, 2, 3, 4, 5, 6.
 Right (left) foot backward on the toe—*place*. Recover—*place*.
 (With feet close, arms across—*bend*. Trunk forward—*bend*.)
 Arms—*fling*. Arms—*bend*.
 (Trunk upward—*stretch*. Feet and arms in position—*place*.)

Trunk to the left—*bend*. Trunk upward—*stretch*. Arms—*change*.
 Trunk to the right—*bend*.

- a. Forward—*jump*, 1, 2, (3, 4), 5, 6.
 (On 3 and 4, the class jump one step forward, keeping the feet together.)

TABLE 33.

EXERCISES.	COMMANDS.
<p>1. a. BREATHING, ARM RAISING SIDWAYS AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.</p> <p>b. FOOT PLACING OUTWARD WITH HIPS FIRM.</p> <p>c. HEAD TURNING. (FEET CLOSE, ARMS BEND.)</p>	<p>b. (With the left foot outward, Hips—<i>firm.</i>) Feet and arms—<i>change.</i> (Feet and arms in position— <i>place.</i>)</p>
<p>2. TRUNK BENDING BACKWARD AND FORWARD. (NECK REST.)</p> <p>3. ARM STRETCHING UPWARD AND DOWNWARD.</p>	<p>Arms upward—<i>stretch.</i> Arms downward—<i>stretch.</i> (The numbers 1, 2, may be omitted from the command.)</p>
<p>4. HEEL RAISING AND KNEE BEND- ING. ARM STRETCHING UP- WARD AND SIDWAYS. (ARMS BEND.)</p>	
<p>5. ARM RAISING FORWARD AND UPWARD, AND PARTING.</p>	
<p>6. *a. TRUNK TURNING. (ARMS ACROSS BEND.)</p> <p>b. TRUNK BENDING SIDWAYS. (FEET CLOSE, ARMS BEND.)</p>	
<p>7. a. MARCHING.</p> <p>b. DANCING STEP FORWARD. (HANDS ON HIPS.) <i>or</i> JUMPING OVER A ROPE.</p> <p>c. GAME.</p>	<p>b. Left foot forward on the toe— <i>place.</i> Dancing step—<i>begin, 1, 2.</i> (On 1, the left foot is brought back to the position of attention, while the right foot glides into the Toe support place position. On 2, the right foot glides back and the left foot forward.)</p>
<p>8. BREATHING. (ATTENTION.)</p>	



TABLE 11

POSITIONS

DEMANDS

1. A. Feet, arms, and hands
in position of ready
- B. Dexterity - slow



[Faint, illegible text in the left column, possibly describing various positions or movements.]

with the left foot sideways,
left foot and arms -
left foot and arms in
position of ready

2. A. Feet, arms, and hands
in position of ready
- B. Feet, arms, and hands
in position of ready

3. Feet, arms, and hands in
position of ready

4. Feet, arms, and hands in
position of ready

5. Feet, arms, and hands in
position of ready

6. Feet, arms, and hands in
position of ready

7. Feet, arms, and hands in
position of ready

8. Feet, arms, and hands in
position of ready

Arms spread, elbows and hands
in position of ready

Arms spread, elbows and hands
in position of ready

TABLE 23.

EXERCISES	COMMENTS
1. a. Standing. Arms raised overhead. Feet close together and feet apart.	b. (With the feet raised.) Hips down. Feet and arms down. (Feet and arms in position plus.)
c. Head raised. (Feet close, arms down)	
2. Torso raised backward and forward. (Feet close.)	
3. Arms straightened upward and downward.	Arms upward—down. Arms downward—up. (The number of times to be determined.)
4. Head raised and feet apart. Arms straightened upward and downward. (Arms down)	
5. Arms raised forward and backward, and upward.	
6. a. Torso raised. (Arms down)	
b. Torso raised upward. (Feet close, arms down)	
7. a. Standing.	
b. Feet close, feet apart.	
c. Feet apart.	
8. Feet apart.	b. Left foot forward on the floor. Dangling step—steps 1, 2. (On 1, the left foot is brought back to the position of attention, while the right foot glides to the floor, supports those positions. On 2, the right foot glides backward, the left foot remaining.)



TABLE 34.

EXERCISES.

1. a. HEAD BENDING BACKWARD AND FORWARD. (HIPS FIRM.)
*b. BREATHING. (HANDS ON CHEST.)
- c. FOOT PLACING SIDEWAYS WITH HIPS FIRM.
2. a. TRUNK BENDING FORWARD. (ARMS ACROSS BEND.)
b. TRUNK BENDING FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD STRETCH.)
3. ARM STRETCHING UPWARD, SIDEWAYS AND DOWNWARD.
4. HEEL RAISING AND KNEE BENDING, HEAD TURNING. (ARMS BEND.)
5. ARM RAISING FORWARD AND UPWARD, SWINGING FORWARD AND SIDEWAYS, DOWNWARD AND BACKWARD.
6. TRUNK BENDING SIDEWAYS. (FEET ASTRIDE; LEFT HAND HIP FIRM, RIGHT HAND NECK REST.)
7. a. MARCHING.
b. CHANGE OF STEP MARCHING.
c. JUMPING *or* GAME.
8. BREATHING. ARM TURNING OUTWARD AND INWARD.

COMMANDS.



- c. (With the left foot sideways, Hips—*firm.*) Feet and arms—*change.* (Feet and arms in position—*place.*)

Arms upward, sideways and downward—*stretch*, 1, 2, 3, 4, 5, 6.

(Arms forward and upward—*raise.*)
Arms forward and sideways—*swing.* Arms forward and upward—*swing.* Arms downward and backward—*swing.* Arms forward and upward—*swing.* (Arms forward and downward—*lower.*)

TABLE 35.

EXERCISES.

1. a. HEAD BENDING SIDWAYS.
(FEET ASTRIDE, HIPS FIRM.)
- b. BREATHING. (ATTENTION.)
- c. TOE SUPPORT PLACING FORWARD. (HIPS FIRM.)
- d. HEEL RAISING AND KNEE BENDING. (ARMS BEND.)
2. TRUNK BENDING BACKWARD AND FORWARD. (NECK REST.)
3. ALTERNATE ARM STRETCHING UPWARD AND BACKWARD.
4. *KNEE RAISING. (HIPS FIRM.)

5. ARM FLINGING. (ARMS ACROSS BEND, TRUNK FORWARD BEND.)
6. TRUNK TURNING. (RIGHT HAND NECK REST, LEFT ARM BEND.)
7. a. MARCHING.
- b. UPWARD JUMP, WITH ARM STRETCHING UPWARD. (ARMS BEND.)
- c. GAME.
8. BREATHING. ARM RAISING FORWARD AND PARTING.

COMMANDS

Left (or right) knee—*raise*. Knee
--*lower*.



b. With arm stretching upward, upward—*jump*, 1, 2, (3, 4), 5, 6. (On 3 the class jump and stretch the arms upward; on 4, the feet touch the ground and the arms are bent.)

RESULTS

DISCUSSION

1. The first group of subjects...
This group...
2. The second group of subjects...
This group...
3. The third group of subjects...
This group...
4. The fourth group of subjects...
This group...
5. The fifth group of subjects...
This group...
6. The sixth group of subjects...
This group...
7. The seventh group of subjects...
This group...
8. The eighth group of subjects...
This group...

These results are consistent with the findings of...

The data indicate that there is a significant difference between...



9. The ninth group of subjects...
This group...
10. The tenth group of subjects...
This group...

It is concluded that the results of this study support the hypothesis that...

TABLE 25


EXERCISES	COMMANDS
1. a. Head turning sideways (First position, right turn) b. Head turning (leftward) c. The shoulder position and width (head turn) d. Head turning and with rotation (head turn)	
2. Trunk turning backward and forward (head turn)	
3. Arm raise, low position constant and rotation	
4. *Arm raising (head turn)	Left (or right) knee - raise. Eyes forward.
	
5. Arm raising (head turn)	
6. Trunk rotation (head turn)	
7. a. Head turn b. Upright arm, with low rotation (head turn) c. Head turn	8. With arm stretching upward, upward (post. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100)
9. Head turning. Arm raising with rotation and rotation	

TABLE 36.

EXERCISES.

COMMANDS.

1. a. ALTERNATE HEEL RAISING.
(HIPS FIRM.)
b. BREATHING. ARM RAISING FORWARD AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.
c. HEAD BENDING BACKWARD, WITH ARM TURNING OUTWARD AND INWARD.
2. a. TRUNK BENDING FORWARD.
(FEET ASTRIDE, ARMS BEND.)
b. TRUNK BENDING FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD STRETCH.)
3. ARM STRETCHING FORWARD, UPWARD AND DOWNWARD.
4. HEEL RAISING AND KNEE BENDING. ARM FLINGING. (ARMS ACROSS BEND.)
5. ARM RAISING SIDWAYS AND UPWARD, AND PARTING.
6. *TRUNK BENDING SIDWAYS.
(FEET ASTRIDE, RIGHT ARM BEND, LEFT HAND NECK REST.)
7. a. MARCHING.
b. DANCING STEP FORWARD (HANDS ON HIPS) *or* JUMPING OVER A ROPE.
c. GAME.
8. BREATHING. (HIPS FIRM.)

Arms forward, upward and downward—*stretch*, 1, 2, 3, 4, 5, 6.

(Heels—*raise*. Knees—*bend*.)
Arms—*fling*. Arms—*bend*.
(Knees—*stretch*. Heels—*lower*.)



(In jumping over a rope, the rope should be raised a reasonable height only, and attention should be paid to the style of the jumping rather than to the actual height jumped.)

TABLE 37.

EXERCISES.

1. a. HEAD BENDING SIDeways.
(FEET ASTRIDE, ARMS BEND.)
b. BREATHING. ARM RAISING
SIDeways.
c. TOE SUPPORT PLACING BACK-
WARD. (HIPS FIRM.)
2. TRUNK BENDING FORWARD, ARM
STRETCHING SIDeways, TRUNK
BENDING BACKWARD. (FEET
ASTRIDE, ARMS BEND.)
3. ARM STRETCHING FORWARD,
UPWARD, SIDeways AND DOWN-
WARD.
4. KNEE RAISING. (HIPS FIRM.)
5. *ALTERNATE ARM FLINGING WITH
HEAD TURNING. (ARMS ACROSS
BEND, TRUNK FORWARD BEND.)
6. TRUNK BENDING SIDeways.
(FEET ASTRIDE, ARMS BEND.)
7. a. MARCHING.
b. HOP MARCH WITH LEG RAISED
BACKWARD. (HANDS ON
HIPS.)
c. GAME.
8. BREATHING. (HANDS ON CHEST.)

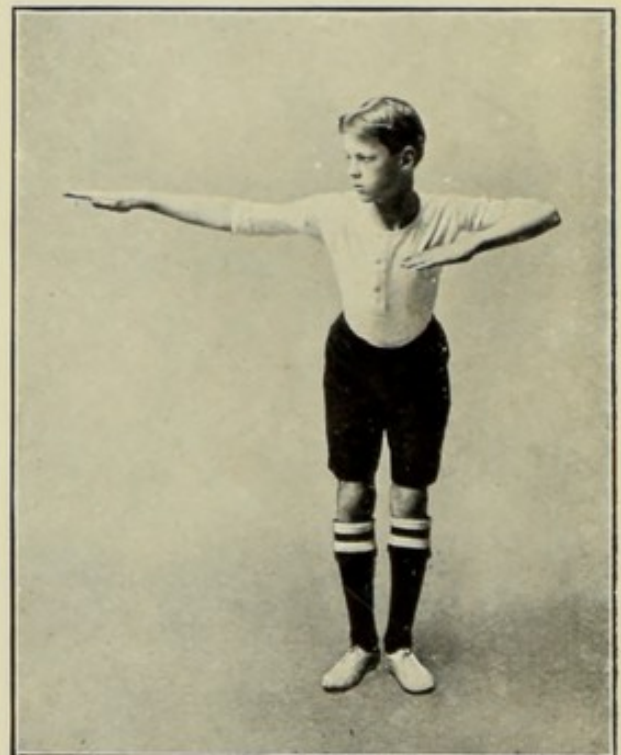
COMMANDS.

Trunk forward—*bend*. Arms side-
ways—*stretch*. Arms—*bend*.
Trunk upward—*stretch*. Trunk
backward—*bend*. Trunk upward
—*stretch*.

Arms forward, upward, sideways
and downward—*stretch*, 1, 2, 3, 4,
5, 6, 7, 8.

Alternate arm flinging with head
turning—*right*; —*left*; —*right*;
—*left*. (**Front**)

(On the command *right*, the right arm
is flung sideways and the head is
turned to the right. On the com-
mand *left*, the right arm resumes
the across bend position, while the
left arm is flung sideways, and
the head turned to the left. On
the command *front*, the across bend
position is assumed and the head
is turned forward.)



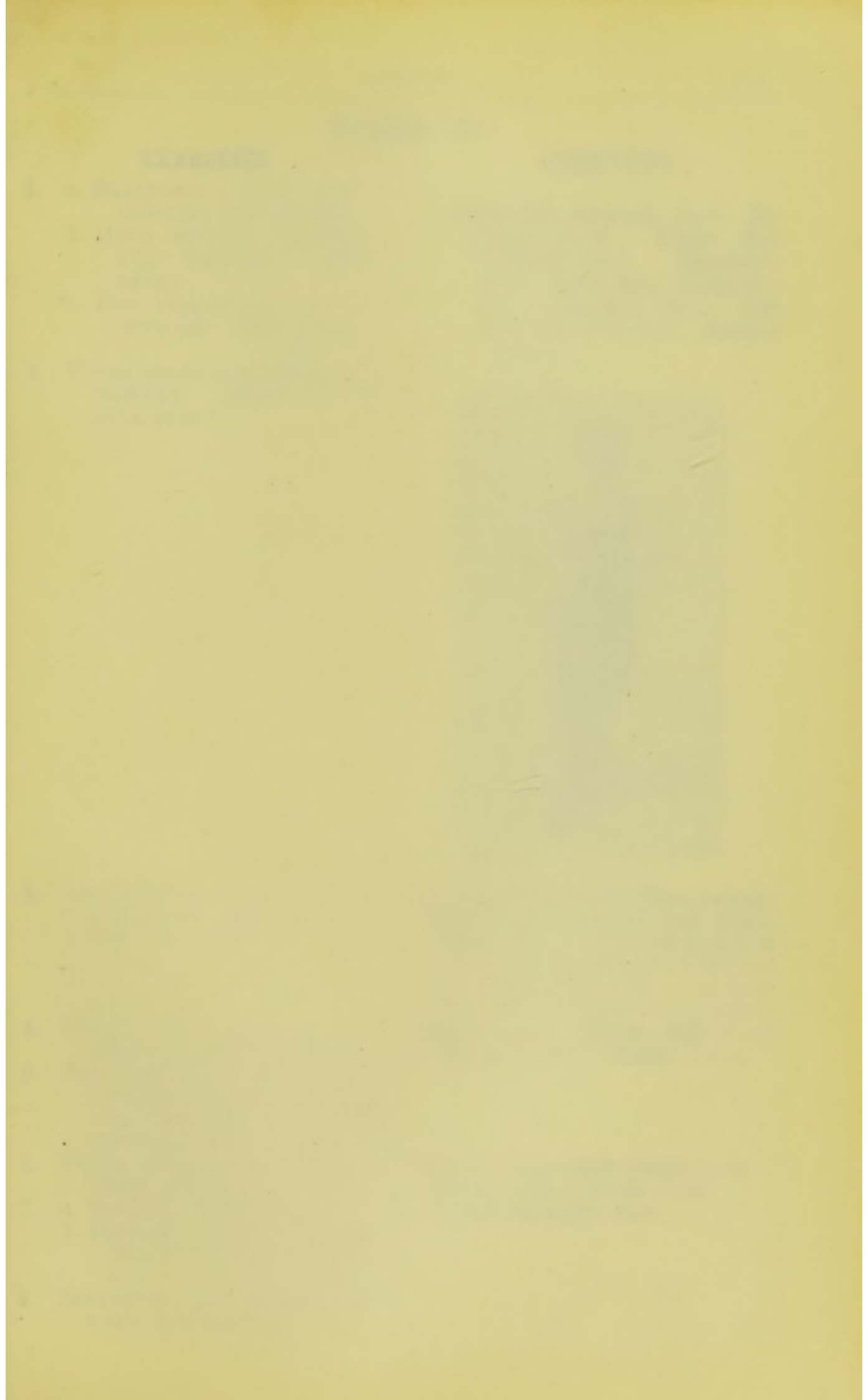


TABLE 38.

EXERCISES.

1. a. BREATHING. ARM RAISING
SIDWAYS AND UPWARD.
- b. HEAD BENDING BACKWARD
AND FORWARD. (ARMS
BEND.)
- *c. FOOT PLACING FORWARD AND
OUTWARD. (HIPS FIRM.)
2. TRUNK BENDING BACKWARD AND
FORWARD. (FEET ASTRIDE,
NECK REST.)
3. ARM STRETCHING UPWARD AND
DOWNWARD, MARKING TIME
WITH KNEE RAISING.
4. HEEL RAISING AND KNEE FULL
BENDING. (HIPS FIRM.)
5. ARM RAISING FORWARD AND
UPWARD, SWINGING FORWARD
AND SIDWAYS, DOWNWARD
AND BACKWARD.
6. TRUNK TURNING, ARM FLINGING.
(ARMS ACROSS BEND.)
7. a. MARCHING. RUNNING.
- b. DANCING STEP FORWARD.
(HANDS ON HIPS) *or* JUMP-
ING.
8. BREATHING. ARM RAISING FOR-
WARD, AND PARTING.

COMMANDS.

- c. Right foot, forward—*place*. Re-
cover—*place*. Right foot,
outward—*place*. Recover—
place. Left foot, forward—
place. Recover—*place*. Left
foot, outward—*place*. Recover
—*place*.



Marking time with Knee raising,
and Arms upward and down-
ward—*stretch*, 1, 2, 3, 4, 5, 6, 7, 8.
(There are two movements of the feet
to one of the arms, the arms mov-
ing with the *left* foot on 1, 3, 5 & 7.)
Heels—*raise*. Knees full—*bend*.
Knees—*stretch*. Heels—*lower*.

Trunk to the right (left)—*turn*.
Arms—*fling*. Arms—*bend*.
Trunk forward—*turn*.

TABLE 39.

EXERCISES.

1. *a.* BREATHING. (HIPS FIRM.)
 - **b.* HEAD BENDING SIDWAYS.
(ARMS BEND.)
 - c.* FOOT PLACING OUTWARD.
HEEL RAISING. (HIPS FIRM.)
2. TRUNK BENDING FORWARD, ARM STRETCHING SIDWAYS, TRUNK BENDING BACKWARD. (ARMS BEND.)
3. ARM STRETCHING UPWARD, SIDWAYS, FORWARD, AND DOWNWARD.
4. HEEL RAISING AND KNEE BENDING, ARM STRETCHING UPWARD, (TWICE). (ARMS BEND.)
5. ALTERNATE HIPS FIRM AND NECK REST. (HIPS FIRM, TRUNK FORWARD BEND.)
6. TRUNK BENDING SIDWAYS. (FEET ASTRIDE, NECK REST.)
7. *a.* MARCHING.
 - b.* ASTRIDE JUMPING WITH ARM FLINGING.
 - c.* GAME OF SKIPPING.
8. BREATHING. (ATTENTION.)

COMMANDS.



Arms upward, sideways, forward and downward—*stretch*, 1, 2, 3, 4, 5, 6, 7, 8.

(Hips—*firm*. Trunk forward—*bend*.) Neck—*rest*. Hips—*firm*. (Trunk upward—*stretch*.)

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TABLE 23.

EXERCISES.	COMMENTS.
1. a. Drawing (Fig. 100)	
*A. Head forward - forward (Arms out)	
c. Head forward - forward (Arms out)	
2. Arms extended forward and upward - forward - forward (Arms out)	
3. Arms extended forward and upward - forward - forward (Arms out)	Arms upward, slightly forward and downward - 1, 2, 3, 4, 5, 6, 7, 8.
4. Arms extended forward and upward - forward - forward (Arms out)	
5. Arms extended forward and upward - forward - forward (Arms out)	Arms - out. Trunk forward - backward. Head - out. Arms out. Trunk upward - downward.
6. Trunk - forward - backward (Arms out)	
7. a. Forward	
b. Arms extended forward and upward	
c. Arms out	
8. Forward - backward	



TABLE 40.

EXERCISES.	COMMANDS.
<p>1. a. BREATHING. ARM RAISING SIDWAYS.</p> <p>b. OUTWARD LUNGE. (HIPS FIRM.)</p> <p>c. TOE SUPPORT PLACING BACK- WARD. (NECK REST.)</p>	<p>b. Feet full—open. Left (right) foot outward in lunge position— place. Recover—pace.</p>
<p>2. TRUNK BENDING FORWARD, HEAD TURNING, TRUNK BENDING BACKWARD. (ARMS BEND.)</p>	<p>Trunk forward—bend. Head to the right—turn, forward—turn. Head to the left—turn, forward —turn Trunk upward—stretch. Trunk backward—bend. Trunk upward—stretch.</p>
<p>3. ARM STRETCHING UPWARD AND DOWNWARD, MARKING TIME, WITH KNEE RAISING.</p>	
<p>4. *LEG RAISING FORWARD. (HIPS FIRM.)</p>	<p>Right (left) leg forward—raise. Leg—lower.</p>
<p>5. ARM RAISING FORWARD AND SWINGING SIDWAYS.</p>	
<p>6. a. TRUNK TURNING, ARM FLING- ING. (ARMS ACROSS BEND.)</p> <p>b. TRUNK BENDING SIDWAYS. (FEET CLOSE, ARMS BEND.)</p>	
<p>7. a. MARCHING.</p> <p>b. RUNNING ON THE SPOT, or SECOND SKIPPING EXER- CISE.†</p> <p>c. GAME.</p>	
<p>8. BREATHING. ARM TURNING OUTWARD AND INWARD.</p>	



† See Appendix A.

TABLE 41.

EXERCISES.	COMMANDS.
<p>1. <i>a.</i> BREATHING. ARM RAISING FORWARD, AND PARTING.</p> <p><i>b.</i> FOOT PLACING FORWARD AND OUTWARD. (HIPS FIRM.)</p> <p><i>c.</i> HEAD BENDING BACKWARD, WITH ARM TURNING OUTWARD AND INWARD.</p>	<p><i>b.</i> Foot placing forward and outward, left foot—<i>begin</i>, 1, 2, 3, 4. Right foot—<i>repeat</i>, 1, 2, 3, 4. (On 1, the foot is placed forward; on 2, it is brought back to position; on 3, it is placed outward; and on 4, again brought back.)</p>
<p>2. <i>a.</i> TRUNK BENDING BACKWARD AND FORWARD. (FEET ASTRIDE, NECK REST.)</p> <p><i>b.</i> TRUNK BENDING FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD STRETCH.)</p>	<p>With one step forward, arms upward—<i>stretch</i>, 1, 2.</p> <p>With one step backward, arms downward—<i>stretch</i>, 1, 2.</p> <p>(On 1, the arms are bent and the left foot is placed forward. On 2, the arms are stretched and the right foot is brought forward into position. The step backward is taken in a similar way.)</p>
<p>3. ARM STRETCHING UPWARD AND DOWNWARD, WITH A STEP FORWARD AND BACKWARD.</p>	<p>Left (right) leg backward—<i>raise</i>. Leg—<i>lower</i>.</p>
<p>4. LEG RAISING BACKWARD. (HIPS FIRM.)</p>	
<p>5. ARM RAISING FORWARD AND UPWARD, SWINGING DOWNWARD AND BACKWARD, FORWARD AND UPWARD, FORWARD AND SIDWAYS.</p>	
<p>6. TRUNK TURNING. (NECK REST.)</p>	
<p>7. <i>a.</i> MARCHING.</p> <p><i>b.</i> DANCING STEP OUTWARD. (HANDS ON HIPS.)</p> <p><i>c.</i> JUMPING RIGHT AND LEFT. (HIPS FIRM.)</p>	<p><i>c.</i> To the right (left)—<i>jump</i>, 1, 2, (3, 4), 5, 6. (On 3 and 4 the jump is made to the side, the feet being kept together.)</p>
<p>8. BREATHING. (HIPS FIRM.)</p>	

TABLE 41.

EXERCISES	COMMANDS
<p>1. A. Standing, feet apart (width of feet) B. Feet raised together and together, then apart (width of feet)</p>	<p>a. Feet placed forward and out- ward left foot—steps, 1, 2, 3, 4. Right foot—steps, 1, 2, 3, 4. On 2, the feet are placed together and raised at least 6 inches on 3, 4 are placed forward, and on 5, feet brought back.</p>
<p>A. Feet raised together with feet raised up and up together.</p>	
<p>2. A. Feet raised together and together, then apart, then apart B. Feet raised together and together, then raised together, then raised.</p>	
<p>3. Feet standing together and together, with a step backward, then forward.</p>	<p>With one step forward, arms up- ward—steps, 1, 2. With one step backward, arms downward—steps, 1, 2. On 3, the arms are held and the feet are placed forward. On 4, the arms are raised and the feet are placed forward. On 5, the feet are placed backward and the arms are raised. The feet are placed on a similar step.</p>
<p>4. Feet raised together, then apart.</p>	<p>Left (right) leg backward—step. Leg—step.</p>
<p>5. Feet raised together and together, then raised together, then raised, then raised, then raised, then raised, then raised.</p>	
<p>6. Feet raised together, then raised.</p>	
<p>7. A. Feet raised together and together, then raised together, then raised. B. Feet raised together and together, then raised together, then raised.</p>	<p>To the right (left)—step, 1, 2, 3, 4, 5. On 1 and 2 the feet are raised to the feet, the feet being raised on 3, 4, 5.</p>
<p>8. Feet raised together, then raised.</p>	

TABLE 42.

EXERCISES.

1. a. HEAD BENDING SIDWAYS.
(FEET ASTRIDE, HIPS FIRM.)
*b. FORWARD LUNGE. (HIPS FIRM.)
c. BREATHING. ARM RAISING SIDWAYS AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.

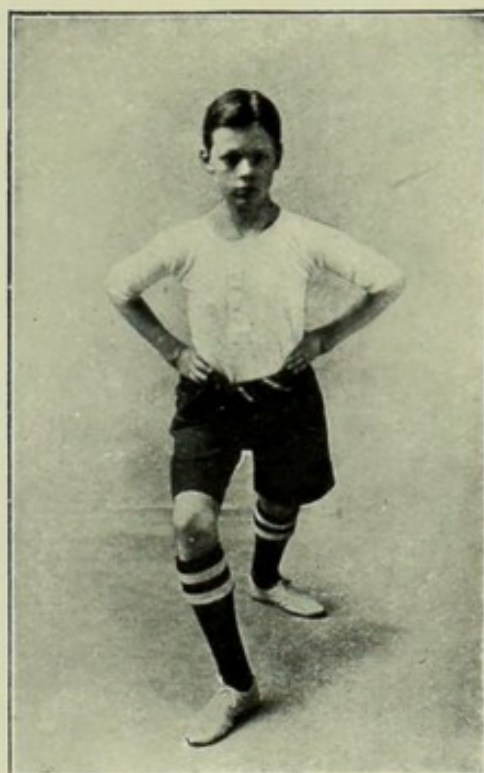
2. a. TRUNK BENDING BACKWARD.
(FEET CLOSE, ARMS BEND.)
b. TRUNK BENDING FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD STRETCH.)

3. ALTERNATE ARM STRETCHING UPWARD AND DOWNWARD, AND UPWARD AND FORWARD.
4. KNEE RAISING. (ARMS BEND.)
5. ALTERNATE HIPS FIRM AND NECK REST. (HIPS FIRM, TRUNK FORWARD BEND.)
6. TRUNK BENDING SIDWAYS. RIGHT ARM UPWARD, LEFT ARM DOWNWARD STRETCH.)
7. a. MARCHING. RUNNING.
b. MARCHING IN TWOS, FOURS, AND EIGHTS.
c. UPWARD JUMP WITH ARM FLINGING. (ARMS ACROSS BEND.)
d. GAME.

8. BREATHING. (ATTENTION.)

COMMANDS.

b. [Feet full—open.]
Right (left) foot forward in lunge position—place. Recover—place.



Right arm upward, left arm downward—stretch. Arms—change.
Right arm forward, left arm upward—stretch. Arms—change.

b. Centre—twos.
Two to the right, two to the left—divide.
Centre—fours.
Four to the left, four to the right—divide.
Centre—eights.
Four to the right, four to the left—divide.
Centre—fours.
Two to the right, two to the left—divide.
Centre—twos.

TABLE 43.

EXERCISES.

1. *a.* BREATHING. ARM RAISING FORWARD AND UPWARD, AND PARTING.
b. HEAD TURNING. (FEET ASTRIDE, HIPS FIRM, TRUNK FORWARD BEND.)
c. FOOT PLACING SIDWAYS. HEEL RAISING. (HIPS FIRM.)
2. TRUNK BENDING BACKWARD AND FORWARD. (FEET ASTRIDE, ARMS ACROSS BEND.)
3. ARM STRETCHING FORWARD AND SIDWAYS, WITH A STEP TO THE RIGHT AND LEFT.
- 4.* HEEL RAISING AND KNEE FULL BENDING. (HIPS FIRM.)
5. ARM RAISING FORWARD AND UPWARD, SWINGING FORWARD AND SIDWAYS.
6. TRUNK TURNING. ARM STRETCHING SIDWAYS. (ARMS BEND.)
7. *a.* MARCHING.
b. RUNNING MAZE.
c. SKIPPING *or* GAME.
8. BREATHING. (HANDS ON CHEST.)

COMMANDS.

With one step to the right, arms sideways—*stretch*, 1, 2.

With one step to the left, arms forward—*stretch*, 1, 2.



Trunk to the right (left) — *turn*.
Arms sideways — *stretch*.
Arms — *bend*.
Trunk forward — *turn*.

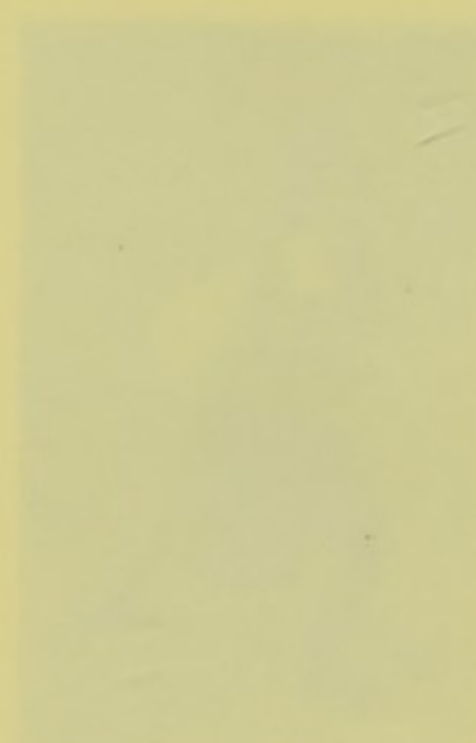
TABLE 41

EXERCISES

DEFINITIONS

1. A. ...
2. ...
3. ...
4. ...
5. ...
6. ...
7. ...
8. ...
9. ...
10. ...

... in the right hand ...



... the right hand ...

TABLE 11

EXERCISES

COMMENTS

- 1. ...
- 2. ...
- 3. ...

...

...

...

With the step to the right, arms sideward - step 1, 2
With the step to the left, arms sideward - step 1, 2



...

...

Trunk to the right (left) - step
Arms sideward - step
Arms - low
Trunk forward - step

...

...

TABLE 44.

EXERCISES.

1. a. HEAD ROLLING. (HIPS FIRM.)
 - *b. OUTWARD LUNGE. (HIPS FIRM.)
 - c. BREATHING. ARM RAISING SIDWAYS.
2. a. TRUNK BENDING FORWARD, HEAD TURNING. (FEET ASTRIDE, HIPS FIRM.)
 - b. TRUNK BENDING FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD STRETCH.)
3. ARM STRETCHING UPWARD AND FORWARD, WITH MARKING TIME.
4. LEG RAISING BACKWARD. (ARMS BEND.)
5. ARM SWINGING FORWARD AND SIDWAYS, WITH FOOT PLACING FORWARD. (ARMS FORWARD AND UPWARD RAISE.)
6. TRUNK BENDING SIDWAYS. (FEET ASTRIDE, NECK REST.)
7. a. MARCHING. GAME.
 - b. UPWARD JUMP, WITH ARM STRETCHING SIDWAYS. (ARMS BEND.)
8. BREATHING. (ATTENTION.)

COMMANDS.

a. **Head rolling to the right (left)**
—begin.
 (The head is bent to the right and then moves smoothly into the backward bend, the left sideways bend and the forward bend position; so returning to the position of Attention.)



(Arms forward and upward—*raise.*)
 With the left foot forward, arms forward and sideways—*swing.*
 Feet and arms—*change, 1, 2.*
 (Attention.)
 (Feet and arms change. On 1, the left foot is brought back and the arms take the upward raise position; on 2, the right foot is placed forward and the arms swing sideways.)

b. **With arm stretching sideways.**
 upward—*jump, 1, 2, (3, 4), 5, 6.*
 (On 3 and 4, the arms are stretched and bent as the jump is taken.)

TABLE 45.


EXERCISES.	COMMANDS.
<p>1. <i>a.</i> FOOT PLACING FORWARD AND SIDEWAYS. (HIPS FIRM.)</p> <p><i>b.</i> BREATHING. ARM RAISING SIDEWAYS.</p> <p><i>c.</i> FORWARD LUNGE. (HIPS FIRM.)</p>	<p><i>a.</i> Foot placing forward and sideways, right foot—<i>begin</i>, 1, 2, 3, 4. Left foot—<i>repeat</i>, 1, 2, 3, 4.</p>
<p>2. <i>a.</i> TRUNK BENDING FORWARD, ARM STRETCHING SIDEWAYS, TRUNK BENDING BACKWARD. (ARMS BEND.)</p>	
<p>3. *ALTERNATE ARM STRETCHING UPWARD AND BACKWARD.</p>	
<p>4. LEG RAISING FORWARD. (ARMS BEND.)</p>	
<p>5. ALTERNATE ARM FLINGING WITH HEAD TURNING. (ARMS ACROSS BEND, TRUNK FORWARD BEND.)</p>	
<p>6. TRUNK TURNING. ARM STRETCHING FORWARD. (ARMS BEND.)</p>	
<p>7. <i>a.</i> MARCHING. RUNNING.</p> <p><i>b.</i> HOP MARCH WITH LEG RAISED BACKWARD. (HANDS ON HIPS.)</p>	
<p><i>c.</i> JUMPING OVER A ROPE.</p>	
<p>8. BREATHING. ARM RAISING FORWARD, AND PARTING.</p>	

TABLE 1

EXERCISES

1. A. How many...
B. How many...

2. A. How many...
B. How many...

3. A. How many...
B. How many...

4. A. How many...
B. How many...

5. A. How many...
B. How many...

6. A. How many...
B. How many...

7. A. How many...
B. How many...

8. A. How many...
B. How many...

9. A. How many...
B. How many...

10. A. How many...
B. How many...

11. How many...

12. A. How many...
B. How many...

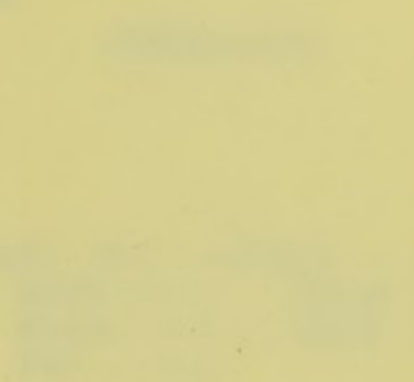


TABLE 45.

EXERCISES	COMMANDS
<p>1. a. Feet placed forward and sideways. (How many?)</p> <p>b. The same. Feet placed backward.</p> <p>c. The same. Feet placed sideways.</p>	<p>Foot placing forward and sideways, right foot—steps 1, 2, 3, 4. Left foot—steps 1, 2, 3, 4.</p>
<p>2. a. Feet placed forward and sideways. (How many?)</p> <p>b. The same. Feet placed backward.</p>	
<p>3. a. Feet placed forward and sideways. (How many?)</p>	
<p>4. Feet placed forward. (How many?)</p>	
<p>5. Feet placed forward and sideways with arms extended. (How many?)</p>	
<p>6. Feet placed forward and sideways. (How many?)</p>	
<p>7. a. Feet placed forward.</p>	<p>(A number of steps, perhaps 3 or 4, may be attempted. The feet should be taken from the right or left foot as commanded.)</p>
<p>b. Feet placed forward and sideways.</p>	
<p>c. Feet placed forward.</p>	
<p>8. Feet placed forward and sideways. (How many?)</p>	

TABLE 46.

EXERCISES.

COMMANDS.

1. *a.* HEAD BENDING BACKWARD AND FORWARD. (FEET CLOSE, ARMS BEND.)
- b.* FOOT PLACING OUTWARD. HEEL RAISING AND KNEE BENDING. (HIPS FIRM.)
- c.* BREATHING. ARM RAISING FORWARD AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.

2. TRUNK BENDING BACKWARD AND FORWARD. (NECK REST.)

3. ARM STRETCHING SIDWAYS AND DOWNWARD, WITH ONE STEP FORWARD AND BACKWARD.

4. LEG RAISING BACKWARD. (NECK REST.)

5. ALTERNATE HIPS FIRM AND NECK REST. (HIPS FIRM, TRUNK FORWARD BEND.)

6. TRUNK BENDING SIDWAYS. (FEET ASTRIDE, RIGHT ARM UPWARD, LEFT ARM DOWNWARD STRETCH.)

7. *a.* MARCHING.
- *b.* DANCING STEP FORWARD (HANDS ON HIPS), *or* THIRD SKIPPING EXERCISE.†
- c.* GAME.

8. BREATHING. (HANDS ON CHEST.)

- b.* (Left foot outward — *place.*)
Heels—*raise.* **Knees**—*bend.*
Knees—*stretch.* **Heels** *lower.*
Feet—*change.*



TABLE 47.

EXERCISES.

1. a. HEAD BENDING SIDeways.
b. OUTWARD LUNGE. (HIPS FIRM.)
c. BREATHING. ARM RAISING SIDeways.
2. a. TRUNK BENDING BACKWARD. (ARMS BEND.)
b. TRUNK BENDING FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD STRETCH.)
3. *ARM STRETCHING UPWARD, WITH TURNING TO THE LEFT AND RIGHT.
4. HEEL RAISING AND KNEE FULL BENDING. (ARMS BEND.)
5. ARM FLINGING. WITH FOOT PLACING OUTWARD. (ARMS ACROSS BEND.)
6. TRUNK BENDING SIDeways. (ARMS SIDeways STRETCH.)
7. a. MARCHING. RUNNING.
b. BACKWARD JUMP. (HIPS FIRM.)
c. GAME.
8. BREATHING. ARM TURNING OUTWARD AND INWARD.

COMMANDS.



To the left turn, and arms upward—stretch, 1, 2.

(On 1, the arms are bent, and the first movement of the turn is made. On 2, the arms are stretched and the turn is completed.)

To the right turn, and arms downward—stretch, 1, 2.

With right foot outward, arms—fling.

Feet and arms—change, 1, 2.

b. Backward—jump, 1, 2, (3, 4), 5, 6.
(On 3 and 4 the class jump one step backward.)

TABLE 1

EXHIBITS

EXHIBITS

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

...

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

TABLE 47.

EXERCISES

COMMENTS

1. a. Feet together, arms straight.
- b. Arms raised, feet apart.
- c. Feet apart, arms raised.
2. a. Feet together, arms raised.
- b. Feet apart, arms raised.
- c. Feet apart, arms raised.



3. Feet together, arms raised.
4. Feet apart, arms raised.
5. Feet together, arms raised.
6. Feet apart, arms raised.
7. Feet together, arms raised.
8. Feet apart, arms raised.
9. Feet together, arms raised.
10. Feet apart, arms raised.

- To the left turn, and arms upward.
- To the right turn, and arms upward.
- With right foot outward, arms raised.
- Backward—arms raised.

TABLE 48.

EXERCISES.

COMMANDS.

1. a. BREATHING. ARM RAISING
SIDWAYS AND UPWARD,
LOWERING SIDWAYS AND
DOWNWARD.
- b. FOOT PLACING FORWARD AND
OUTWARD. HEEL RAISING.
- c. HEAD TURNING. (FEET
ASTRIDE, ARMS BEND, TRUNK
FORWARD BEND.)
2. TRUNK BENDING BACKWARD AND
FORWARD. (NECK REST.)
3. ARM STRETCHING UPWARD,
FORWARD, SIDWAYS AND
DOWNWARD—*twice* in each
direction.
4. KNEE RAISING. (NECK REST.)

5. ARM SWINGING FORWARD AND
SIDWAYS, WITH FOOT PLACING
FORWARD. (ARMS FORWARD
AND UPWARD RAISE.)

- b. Foot placing forward and out-
ward with heel raising, left
foot—*begin*, 1, 2, 3, 4, 5, 6, 7, 8.
Right foot—*repeat*.
(On 1, 2, 3, 4, the left foot is placed
forward, the heels are raised and
lowered and the foot is brought
back to position. On 5, 6, 7, 8,
foot placing outward with heel
raising is performed.)

- (Left knee—*raise*.) Knees—*change*,
1, 2. (Knee—*lower*.)
(On 1, the left knee is lowered and
the weight of the body transferred
to the left leg; on 2, the right
knee is raised.)



6. *TRUNK TURNING. ARM STRETCH-
ING UPWARD. (ARMS BEND.)
7. a. MARCHING.
- b. RUNNING MAZE, *or* SLOW
MARCH, *or* GAME.
8. BREATHING. (HANDS ON CHEST.)

Trunk to the right (left)—*turn*.
Arms upward—*stretch*. Arms—
bend. Trunk forward—*turn*.

NOTES ON THE TABLES IN SERIES C.

(For children aged 11-14 years.)

This Series contains the third set of 24 Tables. Tables 49-60 may be used in Standard V., and Tables 61-72 in Standards VI. and VII.

In the second 12 Tables of this Series it will be noted that Abdominal exercises proper have been introduced between the Shoulder exercises and the Trunk turning and bending. These movements are described in detail in Appendix A., but it must be clearly understood that they are optional, that they are only suitable under special conditions, and that girls should not attempt them unless provided with gymnastic dress.

In other groups, notably the Balance exercises, alternative movements have in some Tables been suggested in order to give greater variety.

Though marching is not definitely mentioned in the second 12 Tables, it should never be omitted from the lesson. The dancing steps are optional and on the whole are more suited to girls than to boys. New steps and additional skipping exercises may of course be taught if desired, and games should frequently be introduced into the lesson, especially perhaps in the boys' classes.

N.B.—The whole of the Tables in Series B must be learned before Series C is commenced.

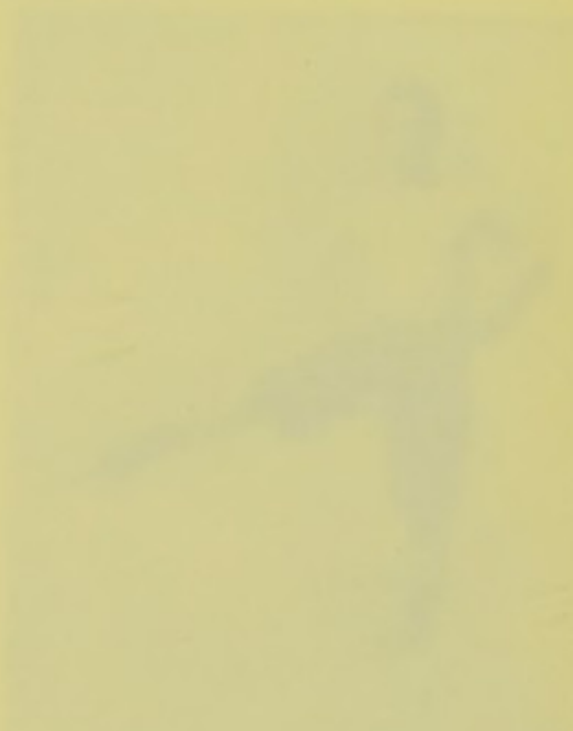
TABLE 10

EXERCISES

PROBLEMS

1. A rectangular box is 10 cm long, 5 cm wide, and 3 cm high. Find its volume.
2. A rectangular box is 12 cm long, 8 cm wide, and 4 cm high. Find its volume.
3. A rectangular box is 15 cm long, 6 cm wide, and 5 cm high. Find its volume.
4. A rectangular box is 20 cm long, 10 cm wide, and 8 cm high. Find its volume.

1. A rectangular box is 10 cm long, 5 cm wide, and 3 cm high. Find its surface area.
2. A rectangular box is 12 cm long, 8 cm wide, and 4 cm high. Find its surface area.
3. A rectangular box is 15 cm long, 6 cm wide, and 5 cm high. Find its surface area.
4. A rectangular box is 20 cm long, 10 cm wide, and 8 cm high. Find its surface area.



5. A rectangular box is 10 cm long, 5 cm wide, and 3 cm high. Find its volume and surface area.
6. A rectangular box is 12 cm long, 8 cm wide, and 4 cm high. Find its volume and surface area.
7. A rectangular box is 15 cm long, 6 cm wide, and 5 cm high. Find its volume and surface area.
8. A rectangular box is 20 cm long, 10 cm wide, and 8 cm high. Find its volume and surface area.

1. A rectangular box is 10 cm long, 5 cm wide, and 3 cm high. Find its volume and surface area.
2. A rectangular box is 12 cm long, 8 cm wide, and 4 cm high. Find its volume and surface area.
3. A rectangular box is 15 cm long, 6 cm wide, and 5 cm high. Find its volume and surface area.
4. A rectangular box is 20 cm long, 10 cm wide, and 8 cm high. Find its volume and surface area.

NOTES ON THE TABLES IN SERIES C.

(For children aged 11-14 years.)

This series contains the third set of 24 Tables. Tables 20 to 22 may be used in Standard V, and Tables 23-27 in Standards VI and VII.

In the second 12 Tables of this series it will be noted that additional exercises have been suggested between the Student exercises and the Teacher notes and headings. These suggestions are described in detail in Appendix A, but it must be clearly understood that they are optional, that they are only suitable under special conditions, and that they should not attempt them unless provided with gymnastic class.

In other groups, notably the Balance exercises, alternative suggestions have in some Tables been suggested in order to give greater variety.

Though teaching is not difficult, especially in the second 12 Tables, it should never be omitted from the lesson. The drawing work are optional and as the whole has been worked out in great detail, some extra suggestions for drawing work are given. It should be noted that the drawing work should be included in the lesson, especially perhaps in the boys' classes.

N.B.—The words of the Tables in Series B must be learned before Series C is commenced.

TABLE 49.

EXERCISES.

1. a. BREATHING. ARM RAISING FORWARD, AND PARTING.
 b. FOOT PLACING FORWARD. HEEL RAISING AND KNEE BENDING. (HIPS FIRM.)
 c. HEAD BENDING BACKWARD. (ARMS SIDWAYS RAISE.)
2. TRUNK BENDING FORWARD AND BACKWARD. (FOOT FORWARD PLACE, HIPS FIRM.)
3. ARM STRETCHING UPWARD AND DOWNWARD, WITH A STEP TO THE RIGHT AND LEFT.
- 4.* LEG RAISING SIDWAYS. (HIPS FIRM.)

COMMANDS.

- b. (Left (right) foot forward—*place*). Heels—*raise*. Knees—*bend*. Knees—*stretch*. Heels *lower*. Feet—*change*.
 - c. (Arms sideways—*raise*.) Head backward—*bend*. Head upward—*stretch*. (Arms—*lower*.) (With the left foot forward, hips—*firm*.) Trunk forward—*bend*. Trunk upward—*stretch*. Trunk backward—*bend*. Trunk upward—*stretch*. Feet and arms—*change*.
- Left (right) leg sideways—*raise*.
 Leg—*lower*.



5. ARM SWINGING FORWARD AND SIDWAYS WITH FOOT PLACING OUTWARD. (ARMS FORWARD AND UPWARD RAISE.)
6. a. TRUNK TURNING. (FEET ASTRIDE, NECK REST.)
 b. TRUNK BENDING SIDWAYS. (ARMS SIDWAYS STRETCH.)
7. a. MARCHING. RUNNING.
 b. JUMPING OVER A ROPE WITH TURNING TO THE RIGHT AND LEFT.
8. BREATHING. (ATTENTION.)

- With the right (left) foot outward, arms forward and sideways—*swing*. Feet and arms—*change*.
- b. (The turn is made as the body is in the air just before landing. For turning to the *right*, the jump is taken from the *right* foot.)

TABLE 50.

EXERCISES.

1. a. FOOT PLACING FORWARD, OUTWARD AND SIDWAYS.
b. HEAD ROLLING. (HIPS FIRM.)
c. BREATHING. ARM TURNING OUTWARD AND INWARD.
2. a. TRUNK BENDING BACKWARD. (NECK REST.)
b. TRUNK BENDING FORWARD AND DOWNWARD. (ARMS UPWARD STRETCH.)
3. ARM STRETCHING FORWARD AND SIDWAYS, WITH TURNING TO THE RIGHT AND LEFT.
- 4.* KNEE RAISING, FOOT BENDING AND STRETCHING. (HIPS FIRM.)
5. ALTERNATE ARMS ACROSS BEND AND NECK REST. (ARMS ACROSS BEND. TRUNK FORWARD BEND.)
6. TRUNK TURNING AND BENDING SIDWAYS. (HIPS FIRM.)
7. a. MARCHING.
b. UPWARD JUMP WITH ARM STRETCHING SIDWAYS *or* UPWARD.
c. SKIPPING *or* GAME.
8. BREATHING. ARM RAISING SIDEWAYS.

COMMANDS.

- a. Foot placing forward, outward and sideways, right foot—*begin*, 1, 2, 3, 4, 5, 6.

To the right, turn & arms forward—*stretch*. To the left, turn & arms sideways—*stretch*. To the left, turn & arms forward—*stretch*. To the right, turn & arms sideways—*stretch*.
(Left (right) knee—*raise*.) Foot bending and stretching by numbers—1, 2, Knees—*change*, 1, 2.

Trunk to the left (right)—*turn*.
Trunk to the left (right)—*bend*.
Trunk upward—*stretch*.
Trunk forward—*turn*.



TABLE 30

EXERCISES

CONTENTS

1. a. Feet placed forward, outward, backward and upward.
- b. Feet placed, backward and upward.
- c. Balance, arms raised, forward and upward.
2. a. Feet placed forward, backward, side.
- b. Feet placed forward, backward, side, arms raised.
3. Feet placed, arms raised, forward, backward, side, side, side.
4. Feet placed, feet raised, backward, side, side.
5. Exercises with arms raised, side, side, side, side, side.
6. Feet placed, feet raised, backward, side, side.
7. a. Exercises.
- b. Exercises with arms raised, side, side, side.
- c. Exercises with arms raised, side, side, side.
8. Exercises, feet raised, side, side.

- a. Feet placed forward, outward and sideways, right foot. Steps 1, 2, 3, 4, 5.
- To the right, turn & arms forward—steps 1. To the left, turn & arms sideways—steps 2. To the left, turn & arms forward—steps 3. To the right, turn & arms sideways—steps 4.
- Left (right) arm—steps 1. Feet bending and stretching by numbers—1, 2. Feet—steps 1, 2.
- Trunk to the left (right)—steps 1. Trunk to the left (right)—steps 2. Trunk upward—steps 3. Trunk forward—steps 4.



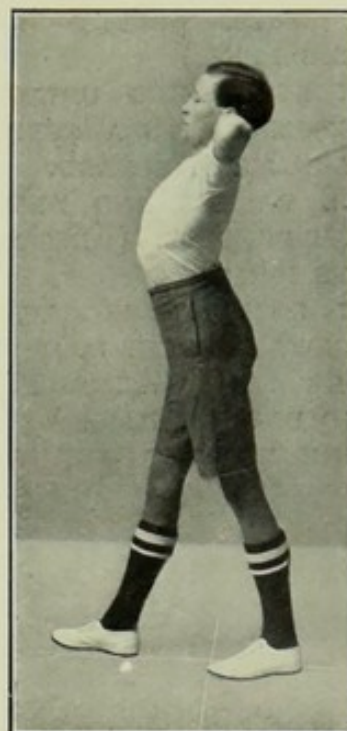
TABLE 51.

EXERCISES.

1. a. HEAD TURNING. (ARMS BEND), TRUNK FORWARD BEND.
- b. FOOT PLACING FORWARD AND OUTWARD. HEEL RAISING AND KNEE BENDING. (HIPS FIRM.)
- c. BREATHING. (HANDS ON CHEST.)
2. *TRUNK BENDING BACKWARD AND FORWARD. (FOOT FORWARD PLACE, NECK REST.)

COMMANDS.

- b. Foot placing forward and outward with heel raising and knee bending, left (right) foot—*begin*, 1, 2, 3, 4, 5, 6. 1, 2, 3, 4, 5, 6.



3. ARM STRETCHING UPWARD AND DOWNWARD, FORWARD AND DOWNWARD, SIDWAYS AND DOWNWARD.
4. LEG RAISING SIDWAYS AND FORWARD. (HIPS FIRM.)
5. ARM FLINGING WITH FORWARD LUNGE. (ARMS ACROSS BEND.)
6. TRUNK TURNING. ARM STRETCHING UPWARD. (FOOT FORWARD PLACE, ARMS BEND.)
7. a. MARCHING.
- b. TAPPING STEP.† (HANDS ON HIPS.)
- c. JUMPING *or* GAME.
8. BREATHING. ARM RAISING FORWARD AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.

Arms upward and downward, forward and downward, sideways and downward—*stretch*.

Left (right) leg, sideways—*raise*. Leg—*lower*. Left (right) leg forward—*raise*. Leg—*lower*.

With arm flinging, left foot forward in lunge position—*place*.

Feet and arms—*change*, 1, 2.

(With the left foot forward, arms upward—*bend*.) Trunk to the left—*turn*. Arms upward—*stretch*. Arms—*bend*. Trunk forward—*turn*.

Feet and arms—*change*.

b. Tapping step right (left) foot—*begin*. Class—*halt*.

† See Appendix A.

TABLE 52.

EXERCISES.

1. a. BREATHING. (HIPS FIRM.)
b. HEEL RAISING, WITH ARM RAISING SIDWAYS AND UPWARD.
c. OUTWARD LUNGE. (HIPS FIRM.)
2. TRUNK BENDING BACKWARD AND FORWARD. ARM STRETCHING SIDWAYS. (FEET ASTRIDE, ARMS BEND.)
3. ARM STRETCHING UPWARD AND FORWARD WITH A STEP BACKWARD AND FORWARD.
4. *HEEL RAISING AND ALTERNATE KNEE BENDING. (FEET ASTRIDE, HIPS FIRM.)
5. ARM SWINGING FORWARD AND SIDWAYS, WITH FOOT PLACING FORWARD. (ARMS FORWARD AND UPWARD RAISE.)
6. TRUNK TURNING AND BENDING SIDWAYS. (ARMS BEND.)

COMMANDS.

- b. Heels, and arms sideways and upward—*raise*. Heels, and arms sideways and downward—*lower*.

Trunk backward—*bend*. Arms sideways—*stretch*. Arms—*bend*. Trunk upward—*stretch*. Trunk forward—*bend*. Arms sideways—*stretch*. Arms—*bend*. Trunk upward—*stretch*.

(Heels—*raise*.) Left (right) knee—*bend*. Knees—*change*. (Knee—*stretch*. Heels—*lower*.)



7. a. MARCHING WITH ARM STRETCHING UPWARD AND DOWNWARD.
b. RUNNING, JUMPING *or* SKIPPING.
c. GAME.
8. BREATHING. ARM RAISING FORWARD, AND PARTING.

a. With arm stretching upward and downward, forward—*march*.

(There are two movements of the feet to each movement of the arms.)

TABLE 15

EXPLANATION

UNITED STATES

Year	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
1. Total population	152,213,000	154,220,000	156,228,000	158,236,000	160,244,000	162,252,000	164,260,000	166,268,000	168,276,000	170,284,000	172,292,000	174,300,000	176,308,000	178,316,000	180,324,000	182,332,000	184,340,000	186,348,000	188,356,000	190,364,000	192,372,000	194,380,000	196,388,000	198,396,000	200,404,000	202,412,000	204,420,000	206,428,000	208,436,000	210,444,000	212,452,000	214,460,000	216,468,000	218,476,000	220,484,000	222,492,000	224,500,000	226,508,000	228,516,000	230,524,000	232,532,000	234,540,000	236,548,000	238,556,000	240,564,000	242,572,000	244,580,000	246,588,000	248,596,000	250,604,000	252,612,000	254,620,000	256,628,000	258,636,000	260,644,000	262,652,000	264,660,000	266,668,000	268,676,000	270,684,000	272,692,000	274,700,000	276,708,000	278,716,000	280,724,000	282,732,000	284,740,000	286,748,000	288,756,000	290,764,000	292,772,000	294,780,000	296,788,000	298,796,000	300,804,000	302,812,000	304,820,000	306,828,000	308,836,000	310,844,000	312,852,000	314,860,000	316,868,000	318,876,000	320,884,000	322,892,000	324,900,000	326,908,000	328,916,000	330,924,000	332,932,000	334,940,000	336,948,000	338,956,000	340,964,000	342,972,000	344,980,000	346,988,000	348,996,000	350,004,000	352,012,000	354,020,000	356,028,000	358,036,000	360,044,000	362,052,000	364,060,000	366,068,000	368,076,000	370,084,000	372,092,000	374,100,000	376,108,000	378,116,000	380,124,000	382,132,000	384,140,000	386,148,000	388,156,000	390,164,000	392,172,000	394,180,000	396,188,000	398,196,000	400,204,000	402,212,000	404,220,000	406,228,000	408,236,000	410,244,000	412,252,000	414,260,000	416,268,000	418,276,000	420,284,000	422,292,000	424,300,000	426,308,000	428,316,000	430,324,000	432,332,000	434,340,000	436,348,000	438,356,000	440,364,000	442,372,000	444,380,000	446,388,000	448,396,000	450,404,000	452,412,000	454,420,000	456,428,000	458,436,000	460,444,000	462,452,000	464,460,000	466,468,000	468,476,000	470,484,000	472,492,000	474,500,000	476,508,000	478,516,000	480,524,000	482,532,000	484,540,000	486,548,000	488,556,000	490,564,000	492,572,000	494,580,000	496,588,000	498,596,000	500,604,000	502,612,000	504,620,000	506,628,000	508,636,000	510,644,000	512,652,000	514,660,000	516,668,000	518,676,000	520,684,000	522,692,000	524,700,000	526,708,000	528,716,000	530,724,000	532,732,000	534,740,000	536,748,000	538,756,000	540,764,000	542,772,000	544,780,000	546,788,000	548,796,000	550,804,000	552,812,000	554,820,000	556,828,000	558,836,000	560,844,000	562,852,000	564,860,000	566,868,000	568,876,000	570,884,000	572,892,000	574,900,000	576,908,000	578,916,000	580,924,000	582,932,000	584,940,000	586,948,000	588,956,000	590,964,000	592,972,000	594,980,000	596,988,000	598,996,000	600,004,000	602,012,000	604,020,000	606,028,000	608,036,000	610,044,000	612,052,000	614,060,000	616,068,000	618,076,000	620,084,000	622,092,000	624,100,000	626,108,000	628,116,000	630,124,000	632,132,000	634,140,000	636,148,000	638,156,000	640,164,000	642,172,000	644,180,000	646,188,000	648,196,000	650,204,000	652,212,000	654,220,000	656,228,000	658,236,000	660,244,000	662,252,000	664,260,000	666,268,000	668,276,000	670,284,000	672,292,000	674,300,000	676,308,000	678,316,000	680,324,000	682,332,000	684,340,000	686,348,000	688,356,000	690,364,000	692,372,000	694,380,000	696,388,000	698,396,000	700,404,000	702,412,000	704,420,000	706,428,000	708,436,000	710,444,000	712,452,000	714,460,000	716,468,000	718,476,000	720,484,000	722,492,000	724,500,000	726,508,000	728,516,000	730,524,000	732,532,000	734,540,000	736,548,000	738,556,000	740,564,000	742,572,000	744,580,000	746,588,000	748,596,000	750,604,000	752,612,000	754,620,000	756,628,000	758,636,000	760,644,000	762,652,000	764,660,000	766,668,000	768,676,000	770,684,000	772,692,000	774,700,000	776,708,000	778,716,000	780,724,000	782,732,000	784,740,000	786,748,000	788,756,000	790,764,000	792,772,000	794,780,000	796,788,000	798,796,000	800,804,000	802,812,000	804,820,000	806,828,000	808,836,000	810,844,000	812,852,000	814,860,000	816,868,000	818,876,000	820,884,000	822,892,000	824,900,000	826,908,000	828,916,000	830,924,000	832,932,000	834,940,000	836,948,000	838,956,000	840,964,000	842,972,000	844,980,000	846,988,000	848,996,000	850,004,000	852,012,000	854,020,000	856,028,000	858,036,000	860,044,000	862,052,000	864,060,000	866,068,000	868,076,000	870,084,000	872,092,000	874,100,000	876,108,000	878,116,000	880,124,000	882,132,000	884,140,000	886,148,000	888,156,000	890,164,000	892,172,000	894,180,000	896,188,000	898,196,000	900,204,000	902,212,000	904,220,000	906,228,000	908,236,000	910,244,000	912,252,000	914,260,000	916,268,000	918,276,000	920,284,000	922,292,000	924,300,000	926,308,000	928,316,000	930,324,000	932,332,000	934,340,000	936,348,000	938,356,000	940,364,000	942,372,000	944,380,000	946,388,000	948,396,000	950,404,000	952,412,000	954,420,000	956,428,000	958,436,000	960,444,000	962,452,000	964,460,000	966,468,000	968,476,000	970,484,000	972,492,000	974,500,000	976,508,000	978,516,000	980,524,000	982,532,000	984,540,000	986,548,000	988,556,000	990,564,000	992,572,000	994,580,000	996,588,000	998,596,000	1,000,604,000	1,002,612,000	1,004,620,000	1,006,628,000	1,008,636,000	1,010,644,000	1,012,652,000	1,014,660,000	1,016,668,000	1,018,676,000	1,020,684,000	1,022,692,000	1,024,700,000	1,026,708,000	1,028,716,000	1,030,724,000	1,032,732,000	1,034,740,000	1,036,748,000	1,038,756,000	1,040,764,000	1,042,772,000	1,044,780,000	1,046,788,000	1,048,796,000	1,050,804,000	1,052,812,000	1,054,820,000	1,056,828,000	1,058,836,000	1,060,844,000	1,062,852,000	1,064,860,000	1,066,868,000	1,068,876,000	1,070,884,000	1,072,892,000	1,074,900,000	1,076,908,000	1,078,916,000	1,080,924,000	1,082,932,000	1,084,940,000	1,086,948,000	1,088,956,000	1,090,964,000	1,092,972,000	1,094,980,000	1,096,988,000	1,098,996,000	1,100,004,000	1,102,012,000	1,104,020,000	1,106,028,000	1,108,036,000	1,110,044,000	1,112,052,000	1,114,060,000	1,116,068,000	1,118,076,000	1,120,084,000	1,122,092,000	1,124,100,000	1,126,108,000	1,128,116,000	1,130,124,000	1,132,132,000	1,134,140,000	1,136,148,000	1,138,156,000	1,140,164,000	1,142,172,000	1,144,180,000	1,146,188,000	1,148,196,000	1,150,204,000	1,152,212,000	1,154,220,000	1,156,228,000	1,158,236,000	1,160,244,000	1,162,252,000	1,164,260,000	1,166,268,000	1,168,276,000	1,170,284,000	1,172,292,000	1,174,300,000	1,176,308,000	1,178,316,000	1,180,324,000	1,182,332,000	1,184,340,000	1,186,348,000	1,188,356,000	1,190,364,000	1,192,372,000	1,194,380,000	1,196,388,000	1,198,396,000	1,200,404,000	1,202,412,000	1,204,420,000	1,206,428,000	1,208,436,000	1,210,444,000	1,212,452,000	1,214,460,000	1,216,468,000	1,218,476,000	1,220,484,000	1,222,492,000	1,224,500,000	1,226,508,000	1,228,516,000	1,230,524,000	1,232,532,000	1,234,540,000	1,236,548,000	1,238,556,000	1,240,564,000	1,242,572,000	1,244,580,000	1,246,588,000	1,248,596,000	1,250,604,000	1,252,612,000	1,254,620,000	1,256,628,000	1,258,636,000	1,260,644,000	1,262,652,000	1,264,660,000	1,266,668,000	1,268,676,000	1,270,684,000	1,272,692,000	1,274,700,000	1,276,708,000	1,278,716,000	1,280,724,000	1,282,732,000	1,284,740,000	1,286,748,000	1,288,756,000	1,290,764,000	1,292,772,000	1,294,780,000	1,296,788,000	1,298,796,000	1,300,804,000	1,302,812,000	1,304,820,000	1,306,828,000	1,308,836,000	1,310,844,000	1,312,852,000	1,314,860,000	1,316,868,000	1,318,876,000	1,320,884,000	1,322,892,000	1,324,900,000	1,326,908,000	1,328,916,000	1,330,924,000	1,332,932,000	1,334,940,000	1,336,948,000	1,338,956,000	1,340,964,000	1,342,972,000	1,344,980,000	1,346,988,000	1,348,996,000	1,350,004,000	1,352,012,000	1,354,020,000	1,356,028,000	1,358,036,000	1,360,044,000	1,362,052,000	1,364,060,000	1,366,068,000	1,368,076,000	1,370,084,000	1,372,092,000	1,374,100,000	1,376,108,000	1,378,116,000	1,380,124,000	1,382,132,000	1,384,140,000	1,386,148,000	1,388,156,000	1,390,164,000	1,392,172,000	1,394,180,000	1,396,188,000	1,398,196,000	1,400,204,000	1,402,212,000	1,404,220,000	1,406,228,000	1,408,236,000	1,410,244,000	1,412,252,000	1,414,260,000	1,416,268,000	1,418,276,000	1,420,284,000	1,422,292,000	1,424,300,000	1,426,308,000	1,428,316,000	1,430,324,000	1,432,332,000	1,434,340,000	1,436,348,000	1,438,356,000	1,440,364,000	1,442,372,000	1,444,380,000	1,446,388,000	1,448,396,000	1,450,404,000	1,452,412,000	1,454,420,000	1,456,428,000	1,458,436,000	1,460,444,000	1,462,452,000	1,464,460,000	1,466,468,000	1,468,476,000	1,470,484,000	1,472,492,000	1,474,500,000	1,476,508,000	1,478,516,000	1,480,524,000	1,482,532,000	1,484,540,000	1,486,548,000	1,488,556,000	1,490,564,000	1,492,572,000	1,494,580,000	1,496,588,000	1,498,596,000	1,500,604,000	1,502,612,000	1,504,620,000	1,506,628,000	1,508,636,000	1,510,644,000	1,512,652,000	1,514,660,000	1,516,668,000	1,518,676,000	1,520,684,000	

TABLE 32

EXERCISES	COMMANDS
1. a. Forward, arms straight b. Head back, arms straight c. Downward, arms straight	1. Heels, and arms sideways and upward - etc. Heels, and arms sideways and downward - etc.
2. Trunk backward - head forward. Arms straight upward. Feet forward.	Trunk backward - head. Arms sideways - head. Arms head. Trunk upward - head. Trunk forward - head. Arms sideways - head. Arms head. Trunk upward - head.
3. Arms straight upward and downward with a slight twist to the right.	Heels - head. Left (right) knee - head. Knees - head. Heels - head.
4. Head, arms, and legs straight up. (Arms straight, feet forward)	
5. Arms straight forward and backward, with feet placed backward. (Arms forward and backward with)	
6. Trunk, arms, and legs backward. Arms head	
7. a. Forward, arms straight upward, head and feet forward	7. With arm straight upward and downward, forward and backward
b. Forward, arms straight upward	8. Trunk up two positions of the feet to each movement of the arms
c. Trunk	
8. Forward, arms straight upward, head and feet	



TABLE 53.

EXERCISES.

COMMANDS.

1. a. HEAD BENDING SIDWAYS.
 b. FOOT PLACING FORWARD, OUTWARD AND SIDWAYS. HEEL RAISING. (HIPS FIRM.)
 c. BREATHING. (ATTENTION.)
2. a. TRUNK BENDING BACKWARD AND FORWARD. (NECK REST.)
 b. TRUNK BENDING FORWARD AND DOWNWARD. (ARMS UPWARD STRETCH.)
3. ALTERNATE ARM STRETCHING UPWARD AND DOWNWARD, AND UPWARD AND FORWARD.
4. KNEE RAISING, LEG STRETCHING FORWARD. (HIPS FIRM.)
5. ARM SWINGING FORWARD AND SIDWAYS WITH FORWARD LUNGE. (ARMS FORWARD AND UPWARD RAISE)
6. a. TRUNK TURNING. ARM FLINGING. (ARMS ACROSS BEND.)
 b. TRUNK BENDING SIDWAYS. (RIGHT FOOT FORWARD PLACE, RIGHT HAND HIP FIRM, LEFT HAND NECK REST.)
7. a. MARCHING.
 b. UPWARD JUMP WITH TURNING TO THE RIGHT OR LEFT.
 * c. CROSSWISE STEP.† (HANDS ON HIPS.)

a. Trunk backward—*bend*. Trunk forward—*bend*.

Left arm upward, right arm downward—*stretch*. Arms—*change*. Right arm upward, left arm forward—*stretch*. Arms—*change*. Right (left) knee—*raise*. Leg forward—*stretch*. Knee—*bend*. Knee—*lower*.

With arm swinging forward and sideways, left foot forward in lunge position—*place*. Feet and arms—*change*, 1, 2.

b. Trunk to the right—*bend*. Trunk upward—*stretch*. Feet and arms—*change*.

b. With turning to the right (left), upward—*jump*, 1, 2, (3, 4), 5, 6.
 c. Crosswise step, left (right) foot—*begin*. Class—*halt*.



8. BREATHING. ARM RAISING SIDEWAYS.

TABLE 54.

EXERCISES.

1. a. BREATHING. (HANDS ON CHEST.)
b. HEAD BENDING BACKWARD, WITH ARM RAISING SIDEWAYS.
*c. HEEL RAISING. ARM FLINGING. (ARMS ACROSS BEND.)
2. TRUNK BENDING BACKWARD AND FORWARD. (FOOT FORWARD PLACE, NECK REST.)
3. ARM STRETCHING UPWARD AND FORWARD, WITH TURNING TO THE LEFT AND RIGHT.
4. HEEL RAISING AND KNEE BENDING, ARM RAISING FORWARD, AND PARTING.
5. ARM RAISING FORWARD AND UPWARD, SWINGING DOWNWARD AND BACKWARD, AND FORWARD AND SIDEWAYS.
6. TRUNK TURNING AND BENDING SIDEWAYS. (FEET ASTRIDE, HIPS FIRM.)
7. a. MARCHING. RUNNING.
b. FORWARD JUMP TWICE.
c. HOP MARCH WITH LEG RAISED FORWARD, *or* SKIPPING.
8. BREATHING. (ATTENTION.)

COMMANDS.

- b. With arm raising sideways, head backward—*bend*. With arm lowering, head upward—*stretch*.



Trunk backward—*bend*. Trunk forward—*bend*. Trunk upward—*stretch*. Feet and arms—*change*.

(Heels—*raise*. Knees bend and arms forward—*raise*.) Arm parting by numbers—1, 2. (Knees stretch and arms—*lower*. Heels—*lower*.)

- b. Twice forward—*jump*, 1, 2, (3, 4), (5, 6), 7, 8.
(The class jump one step forward on (3, 4) and (5, 6).)

TABLE I

EXPERIMENTAL DATA

Run	Temperature (°C)	Time (min)	Yield (%)	Notes
1	100	10	10	Low yield at low temp
2	100	20	15	
3	100	30	20	
4	100	40	25	
5	100	50	30	
6	100	60	35	
7	100	70	40	
8	100	80	45	
9	100	90	50	
10	100	100	55	
11	120	10	15	
12	120	20	20	
13	120	30	25	
14	120	40	30	
15	120	50	35	
16	120	60	40	
17	120	70	45	
18	120	80	50	
19	120	90	55	
20	120	100	60	
21	140	10	20	
22	140	20	25	
23	140	30	30	
24	140	40	35	
25	140	50	40	
26	140	60	45	
27	140	70	50	
28	140	80	55	
29	140	90	60	
30	140	100	65	
31	160	10	25	
32	160	20	30	
33	160	30	35	
34	160	40	40	
35	160	50	45	
36	160	60	50	
37	160	70	55	
38	160	80	60	
39	160	90	65	
40	160	100	70	
41	180	10	30	
42	180	20	35	
43	180	30	40	
44	180	40	45	
45	180	50	50	
46	180	60	55	
47	180	70	60	
48	180	80	65	
49	180	90	70	
50	180	100	75	

TABLE 34.

STAIRS

GRANDS

1. Head forward, arms forward, feet forward.

2. Head forward, arms forward, feet forward.

3. Head forward, arms forward, feet forward.

With arms rising slightly, head backward-lean. With arms lowering, head upward-lean.



4. Head forward, arms forward, feet forward.

5. Head forward, arms forward, feet forward.

6. Head forward, arms forward, feet forward.

7. Head forward, arms forward, feet forward.

8. Head forward, arms forward, feet forward.

9. Head forward, arms forward, feet forward.

10. Head forward, arms forward, feet forward.

Trunk backward-lean. Trunk forward-lean. Trunk upward-lean. Feet and arms forward.

Head with knees backward-lean. Head with knees forward-lean. Head with knees upward-lean. Feet and arms forward.

Trunk forward-lean (1, 2, 3, 4), (5, 6, 7, 8).

Head with knees forward-lean (1, 2, 3, 4), (5, 6, 7, 8).

TABLE 55.

EXERCISES.

1. a. BREATHING. ARM RAISING FORWARD, AND PARTING.
 b. OUTWARD LUNGE. (HIPS FIRM.)
 c. HEAD BENDING BACKWARD AND FORWARD. (HIPS FIRM.)
2. a. TRUNK BENDING BACKWARD. ARM STRETCHING SIDWAYS. (ARMS BEND.)
 b. TRUNK BENDING FORWARD AND DOWNWARD. (ARMS UPWARD STRETCH.)
3. ARM STRETCHING FORWARD AND UPWARD, WITH MARKING TIME.
- 4.* LEG RAISING BACKWARD, WITH ARM RAISING SIDWAYS.
5. ARM RAISING AND LOWERING. (ARMS SIDWAYS RAISE, TRUNK FORWARD BEND.)
6. TRUNK TURNING. ARM STRETCHING UPWARD. (ARMS BEND.)
7. a. MARCHING WITH ARM STRETCHING SIDWAYS AND DOWNWARD.
 b. LONG JUMPING.
 c. GAME *or* SKIPPING.
8. BREATHING. (HANDS ON CHEST.)

COMMANDS.

- b. Left foot outward in lunge position—*place*. Feet—*change*, 1, 2. (On 1, the left foot is brought back; on 2, the right foot lunges.)



- Left (right) leg backward and arms sideways—*raise*. Feet and arms—*change*.
 (Arms sideways—*raise*. Trunk forward—*bend*.) Arm raising upward and lowering by numbers—1, 2. (Trunk upward—*stretch*. Arms—*lower*.)
 (On 1, the arms are raised upward; on 2, they are lowered to the shoulder line.)
- b. (This may be taken over two lines chalked on the floor. There should be a running start, say, of 3 steps, and the jump may be taken from the left or right foot as commanded. The landing must be in correct form, and attention should be paid to correctness of style rather than to the length of the jump.)

TABLE 56.

EXERCISES.

1. *a.* HEAD BENDING BACKWARD, WITH ARM TURNING OUTWARD AND INWARD.
- b.* FOOT PLACING FORWARD, OUTWARD AND SIDWAYS. HEEL RAISING. (HIPS FIRM.)
- c.* BREATHING. ARM RAISING SIDWAYS.
2. TRUNK BENDING BACKWARD AND FORWARD, ARM FLINGING. (FEET ASTRIDE, ARMS ACROSS BEND.)
3. ARM STRETCHING FORWARD, UPWARD, SIDWAYS AND DOWNWARD, *twice* in each direction.
4. KNEE RAISING, LEG STRETCHING FORWARD. (NECK REST.)
- 5.* ARM SWINGING FORWARD AND SIDWAYS, WITH FORWARD LUNGE. (ARMS FORWARD AND UPWARD RAISE.)
6. TRUNK BENDING SIDWAYS. (FOOT FORWARD PLACE, ARMS SIDWAYS STRETCH.)

COMMANDS.

Trunk backward—*bend*. Arms—*fling*. Arms—*bend*. Trunk forward—*bend*. Arms—*fling*. Arms—*bend*. (Trunk upward—*stretch*.)

(With arm swinging forward and sideways, left foot forward in lunge position—*place*.) Arms forward and upward—*swing*. Arms forward and sideways—*swing*. Feet and Arms—*change*.



7. *a.* MARCHING.
- b.* STANDING JUMP, OVER A ROPE.
- c.* RUNNING, GAME *or* SKIPPING.
8. BREATHING. (HIPS FIRM.)

b. (The jump is taken from both feet as in the "Upward jump," with no running start.)

TABLE II

EXERCISES

EXERCISES

1. a. Determine the value of the function $f(x) = x^2 + 3x - 5$ at $x = 2$.
- b. Find the domain of the function $f(x) = \sqrt{x-1}$.
- c. Find the range of the function $f(x) = \sqrt{x-1}$.

2. a. Find the derivative of $f(x) = x^3 + 2x^2 - 5x + 7$.
- b. Find the derivative of $f(x) = \sin(x)$.

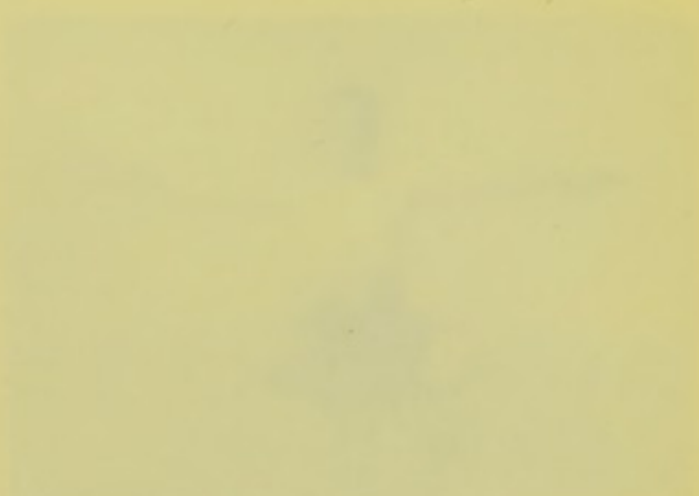
3. a. Find the integral of $f(x) = 2x + 3$.
- b. Find the integral of $f(x) = \cos(x)$.

4. Find the limit of $f(x) = \frac{x^2 - 4}{x - 2}$ as x approaches 2.

5. A car starts from rest and accelerates at 10 m/s^2 . How far does it travel in 5 seconds?

6. Find the area of a circle with radius 3.

7. a. Maximize the function $f(x) = -x^2 + 4x - 5$.
- b. Minimize the function $f(x) = x^2 + 4x + 5$.



Area of a circle = πr^2
 where r is the radius of the circle.
 Example: If $r = 3$, then $A = \pi(3)^2 = 9\pi$.

The area of a circle is proportional to the square of its radius.

If the radius is doubled, the area is quadrupled.

For example, if the radius is 2, the area is 4π . If the radius is 4, the area is 16π .

8. Determine the volume of a sphere with radius 3.

TABLE 10

MOVEMENTS

COMMANDS

1. A. From march position, march forward, arms and hands.
- B. From march position, march forward, arms and hands, feet together.
- C. From march position, march forward, arms and hands, feet together, arms and hands.
2. From march position, march forward, arms and hands, feet together, arms and hands.
3. From march position, march forward, arms and hands, feet together, arms and hands.
4. From march position, march forward, arms and hands, feet together, arms and hands.
5. From march position, march forward, arms and hands, feet together, arms and hands.
6. From march position, march forward, arms and hands, feet together, arms and hands.

Trunk backward and arms forward; arms and trunk forward; arms and trunk forward; trunk upward.

With arm swinging forward and sideways, left foot forward in lunge position; arms forward and spread; arms forward and sideways; feet and arms.



7. From march position, march forward, arms and hands, feet together, arms and hands.
8. From march position, march forward, arms and hands, feet together, arms and hands.

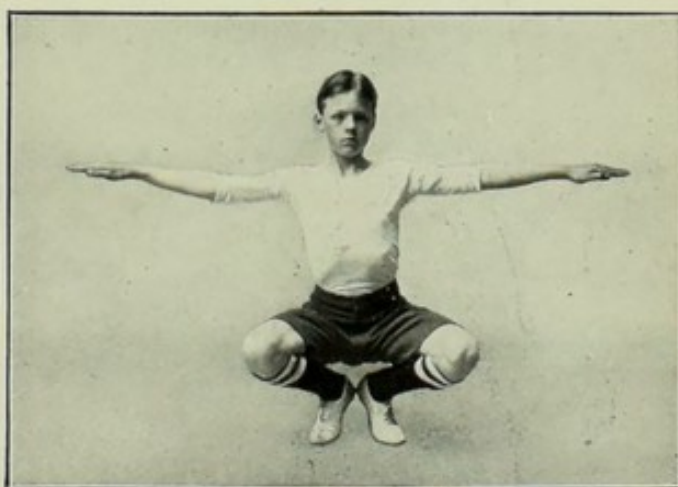
The jump is taken from both feet and the arms are spread wide.

TABLE 57.

EXERCISES.

COMMANDS.

1. a. BREATHING. ARM RAISING FORWARD AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.
- b. HEAD TURNING. (HIPS FIRM, TRUNK FORWARD BEND.)
- c. FOOT PLACING FORWARD AND OUTWARD. HEEL RAISING AND KNEE BENDING. (HIPS FIRM.)
2. a. TRUNK BENDING BACKWARD. (NECK REST.)
- b. TRUNK BENDING FORWARD AND DOWNWARD. (ARMS UPWARD STRETCH.)
3. ALTERNATE ARM STRETCHING UPWARD AND BACKWARD, FORWARD AND SIDWAYS.
4. *HEEL RAISING AND KNEE FULL BENDING. ARM STRETCHING SIDWAYS AND UPWARD. (ARMS BEND.)
5. ARM RAISING FORWARD, AND PARTING. (TRUNK FORWARD BEND.)
6. TRUNK TURNING AND BENDING SIDWAYS. (ARMS BEND.)
7. a. MARCHING.
- b. MARCHING WITH KNEE RAISING AND LEG STRETCHING FORWARD. ("STORK MARCH.")
- c. STANDING LONG JUMP *or* GAME, *or* DANCING STEP.
8. BREATHING. (ATTENTION.)



(Arms forward—raise. Trunk forward—bend.) Arm parting by numbers—1, 2. (Trunk upward—stretch. Arms—lower.)

b. With left knee raising and leg stretching forward—march, 1, 2, 3, 4.

or "Stork march," left (right) foot—begin, 1, 2, 3, 4.

(On 1, the knee is raised; on 2, the leg is stretched forward; on 3, the raised foot is brought to the ground; on 4, there is a short pause with the whole weight on the front leg and the back heel raised.)

TABLE 58.

EXERCISES.

1. *a.* HEAD ROLLING. (HIPS FIRM.)
b. HEEL RAISING AND KNEE BENDING, WITH ARM RAISING SIDEWAYS AND UPWARD.
c. BREATHING. (HANDS ON CHEST.)
2. *a.* TRUNK BENDING BACKWARD. ARM STRETCHING SIDEWAYS. (FEET ASTRIDE, ARMS BEND.)
b. TRUNK BENDING FORWARD AND DOWNWARD. ARMS UPWARD STRETCH.
3. ARM STRETCHING FORWARD AND SIDEWAYS, WITH A STEP TO THE LEFT AND RIGHT.
4. KNEE RAISING, FOOT BENDING AND STRETCHING. (ARMS BEND.)
5. ARM FLINGING WITH FORWARD LUNGE. (ARMS ACROSS BEND.)
6. *TRUNK TURNING AND BENDING SIDEWAYS. (RIGHT HAND HIP FIRM, LEFT HAND NECK REST.)
7. *a.* MARCHING.
b. RUNNING MAZE, *or* FOURTH SKIPPING EXERCISE.†
c. TWICE UPWARD JUMP WITH TURNING TO THE RIGHT OR LEFT.
8. BREATHING. ARM RAISING SIDEWAYS.

COMMANDS.

- b.* (As the heels are raised, the arms are raised to the shoulder line; as the knees are bent, the arms are raised upward. The return movement is performed similarly.)



- c.* With turning to the right (or left), twice upward—jump, 1, 2, (3, 4), (5, 6), 7, 8.
(The turn is made during the second jump.)

† See Appendix A.

TABLE 10.

EXERCISES

COMMENTS

1. Stand with feet together, arms at sides, head erect.
2. Raise right arm straight up, head erect.
3. Raise left arm straight up, head erect.
4. Raise both arms straight up, head erect.
5. Stand with feet together, arms at sides, head erect.
6. Raise right arm straight up, head erect.
7. Raise left arm straight up, head erect.
8. Raise both arms straight up, head erect.

When standing with feet together, arms at sides, head erect, the body is in a vertical line. When the arms are raised straight up, the body is still in a vertical line, but the arms are now in a vertical line with the head. This exercise is designed to develop the muscles of the arms and shoulders, and to improve the posture of the body.



9. Stand with feet together, arms at sides, head erect.
10. Raise right arm straight up, head erect.
11. Raise left arm straight up, head erect.
12. Raise both arms straight up, head erect.

When standing with feet together, arms at sides, head erect, the body is in a vertical line. When the arms are raised straight up, the body is still in a vertical line, but the arms are now in a vertical line with the head. This exercise is designed to develop the muscles of the arms and shoulders, and to improve the posture of the body.

TABLE 10

EXERCISES

EXERCISES

1. A man starts at a point and walks 3 miles north, then 4 miles west, then 3 miles south, then 4 miles east. How far is he from his starting point?
2. A man starts at a point and walks 3 miles north, then 4 miles west, then 3 miles south, then 4 miles east. How far is he from his starting point?
3. A man starts at a point and walks 3 miles north, then 4 miles west, then 3 miles south, then 4 miles east. How far is he from his starting point?
4. A man starts at a point and walks 3 miles north, then 4 miles west, then 3 miles south, then 4 miles east. How far is he from his starting point?
5. A man starts at a point and walks 3 miles north, then 4 miles west, then 3 miles south, then 4 miles east. How far is he from his starting point?
6. A man starts at a point and walks 3 miles north, then 4 miles west, then 3 miles south, then 4 miles east. How far is he from his starting point?
7. A man starts at a point and walks 3 miles north, then 4 miles west, then 3 miles south, then 4 miles east. How far is he from his starting point?
8. A man starts at a point and walks 3 miles north, then 4 miles west, then 3 miles south, then 4 miles east. How far is he from his starting point?
9. A man starts at a point and walks 3 miles north, then 4 miles west, then 3 miles south, then 4 miles east. How far is he from his starting point?
10. A man starts at a point and walks 3 miles north, then 4 miles west, then 3 miles south, then 4 miles east. How far is he from his starting point?

The distance from the starting point to the ending point is 5 miles.



With turning to the right the path is 5 miles long.

TABLE 59.

EXERCISES.

1. a. BREATHING. ARM RAISING FORWARD, AND PARTING.
 b. HEEL RAISING WITH *slow* ARM STRETCHING UPWARD. (ARMS BEND.)
 c. HEAD BENDING SIDWAYS. (HIPS FIRM.)
2. TRUNK BENDING BACKWARD AND FORWARD. (ARMS SIDWAYS STRETCH.)
3. ARM STRETCHING SIDWAYS, UPWARD, FORWARD AND DOWNWARD, *twice* in each direction.
4. LEG RAISING SIDWAYS, WITH ARM RAISING SIDWAYS.
5. ARM SWINGING DOWNWARD AND BACKWARD, WITH FOOT PLACING FORWARD. (ARMS FORWARD AND UPWARD RAISE.)
6. a. TRUNK TURNING. (FEET CLOSE, ARMS BEND.)
 b. TRUNK BENDING SIDWAYS. (FEET ASTRIDE, NECK REST.)



7. a. MARCHING.
 *b. BALANCE MARCH. (HIPS FIRM.)
 c. RUNNING *or* GAME, *or* DANCING STEP.
8. BREATHING. (HIPS FIRM.)

COMMANDS.

- b. With heel raising and lowering, *slow* arm stretching upward by numbers—1—, 2—.

Left (right) leg and arms sideways—*raise*. Feet and arms—*change*.

- a. (Trunk to the left—*turn*.) Trunk forward and to the right—*turn*. Trunk forward and to the left—*turn*. (Trunk forward—*turn*.)

- b. Balance march, left foot—*begin*, 1, 2, 3, 4, 5, 6, 7, 8. (On 1, 2, and 3, three ordinary marching steps are taken; on 4, the right leg is raised forward and is kept in this position during 5, 6, 7, 8. On 1, the movement is repeated beginning with the right foot.)

TABLE 61.

EXERCISES.

COMMANDS.

1. a. BREATHING. (ATTENTION.)
 b. HEEL RAISING AND KNEE BENDING. ARM RAISING SIDeways AND UPWARD.
 c. HEAD BENDING BACKWARD AND FORWARD.
2. TRUNK BENDING BACKWARD AND FORWARD. (FOOT FORWARD PLACE, NECK REST.)
3. ARM STRETCHING UPWARD, FORWARD AND DOWNWARD, WITH TURNING TO THE RIGHT OR LEFT, ON *downward*.
- 4.* LEG AND ARM RAISING FORWARD.
 or, HEEL RAISING AND ALTERNATE KNEE BENDING. (FEET ASTRIDE, HIPS FIRM.)
5. ARM SWINGING FORWARD AND UPWARD, AND FORWARD AND SIDeways. (ARMS SIDeways RAISE, TRUNK FORWARD BEND.)

Trunk falling backward.† (Kneeling, Hips firm.)
6. a. TRUNK TURNING. (ARMS UPWARD STRETCH.)

 b. TRUNK BENDING SIDeways. (NECK REST.)
7. a. TAPPING STEP, or GAME.
 b. BALANCE MARCH.
8. BREATHING. ARM RAISING FORWARD, AND PARTING.



- With turning to the left on "downward," arms upward, forward and downward—*stretch*.
 (The first movement of the turn is made as the arms are bent before stretching downward, the turn is completed as the arms are stretched downward.)
- Right leg and arms, forward—*raise*. Leg and arms—*lower*.
 Left leg and arms, forward—*raise*.
 (Arms sideways — *raise*. Trunk forward—*bend*.) Arms forward and upward—*swing*. Arms forward and sideways — *swing*. (Trunk upward—*stretch*. Arms—*lower*.)
 (Kneel—*down*. Hips—*firm*.) Trunk backward—*fall*. Trunk upward—*raise*. (Stand.)
- a. (Arms upward—*stretch*.) Trunk to the left—*turn*. Trunk forward and to the right—*turn*. Trunk forward—*turn*. (Arms downward—*stretch*.)
 - b. Trunk to the right—*bend*. Trunk upward and to the left—*bend*. Trunk upward—*stretch*.

† See Appendix A.

TABLE 62.

EXERCISES.

1. a. HEAD BENDING BACKWARD,
WITH ARM RAISING SIDE-
WAYS.
- b. BREATHING. (HANDS ON
CHEST.)
- c. BACKWARD LUNGE. (HIPS
FIRM.)

2. TRUNK BENDING BACKWARD AND
FORWARD, ARM STRETCHING UP-
WARD. TRUNK BENDING DOWN-
WARD. (FEET ASTRIDE, ARMS
BEND.)

3. ALTERNATE ARM STRETCHING
UPWARD AND FORWARD, SIDE-
WAYS AND DOWNWARD.

4. KNEE RAISING, LEG STRETCHING
BACKWARD. (HIPS FIRM.)

5. ARM SWINGING FORWARD AND
SIDEWAYS, WITH FORWARD
LUNGE. (ARMS FORWARD AND
UPWARD RAISE.)

**Alternate leg raising.† (Lying,
Hips firm.)
or, Trunk falling backward.
(Kneeling, Arms bend.)*

6. a. TRUNK TURNING. (LEFT ARM
BEND, RIGHT HAND NECK
REST.)
- b. TRUNK BENDING SIDEWAYS.
(FEET ASTRIDE, ARMS UP-
WARD STRETCH).
7. a. CROSSWISE STEP. (HANDS
ON HIPS.)
- b. SKIPPING *or* JUMPING, *or* GAME.
8. BREATHING. ARM TURNING OUT-
WARD AND INWARD.

COMMANDS.

- c. Left (right) foot backward in
lunge position—*place*. Recover
—*place*.

(The position thus attained is iden-
tical with a forward lunge of the
right (left) foot.)

Trunk backward—*bend*. Arms
upward—*stretch*. Arms—*bend*.
Trunk forward—*bend*. Arms
upward—*stretch*. Trunk down-
ward—*bend*. Trunk forward and
upward—*stretch*.

Left knee—*raise*. Leg backward—
stretch. Knee—*bend*. Feet—
change, 1, 2.

(Lie—*down*. Hips—*firm*.) Left
(right) leg—*raise*. Leg—*lower*.
(Stand.)



TABLE NO.

EXERCISES

FIGURES

1. Exercise 1. The student should stand with feet together, arms at sides, and head erect.
2. Exercise 2. The student should stand with feet together, arms at sides, and head erect. Then, raise the right arm to the shoulder level.
3. Exercise 3. The student should stand with feet together, arms at sides, and head erect. Then, raise the right arm to the shoulder level and the left arm to the shoulder level.
4. Exercise 4. The student should stand with feet together, arms at sides, and head erect. Then, raise the right arm to the shoulder level and the left arm to the shoulder level. Then, raise the right arm to the shoulder level and the left arm to the shoulder level.
5. Exercise 5. The student should stand with feet together, arms at sides, and head erect. Then, raise the right arm to the shoulder level and the left arm to the shoulder level. Then, raise the right arm to the shoulder level and the left arm to the shoulder level.
6. Exercise 6. The student should stand with feet together, arms at sides, and head erect. Then, raise the right arm to the shoulder level and the left arm to the shoulder level. Then, raise the right arm to the shoulder level and the left arm to the shoulder level.
7. Exercise 7. The student should stand with feet together, arms at sides, and head erect. Then, raise the right arm to the shoulder level and the left arm to the shoulder level. Then, raise the right arm to the shoulder level and the left arm to the shoulder level.
8. Exercise 8. The student should stand with feet together, arms at sides, and head erect. Then, raise the right arm to the shoulder level and the left arm to the shoulder level. Then, raise the right arm to the shoulder level and the left arm to the shoulder level.
9. Exercise 9. The student should stand with feet together, arms at sides, and head erect. Then, raise the right arm to the shoulder level and the left arm to the shoulder level. Then, raise the right arm to the shoulder level and the left arm to the shoulder level.
10. Exercise 10. The student should stand with feet together, arms at sides, and head erect. Then, raise the right arm to the shoulder level and the left arm to the shoulder level. Then, raise the right arm to the shoulder level and the left arm to the shoulder level.



FIG. 1. Standing posture - feet together, arms at sides, head erect.

FIG. 2. Standing posture - feet together, arms at sides, head erect.



FIG. 3. Standing posture - feet together, arms at sides, head erect.

FIG. 4. Standing posture - feet together, arms at sides, head erect.

TABLE 10.

EXERCISES

COMMANDS

1. The right foot backward in long position - feet together.
2. The left foot backward in long position - feet together.
3. The right foot backward in long position - feet together - arms spread - trunk forward and upward.
4. The left foot backward in long position - feet together - arms spread - trunk forward and upward.
5. The right foot backward in long position - feet together - arms spread - trunk forward and upward - head back.
6. The left foot backward in long position - feet together - arms spread - trunk forward and upward - head back.
7. The right foot backward in long position - feet together - arms spread - trunk forward and upward - head back - legs back.
8. The left foot backward in long position - feet together - arms spread - trunk forward and upward - head back - legs back.
9. The right foot backward in long position - feet together - arms spread - trunk forward and upward - head back - legs back - arms spread - trunk forward and upward.
10. The left foot backward in long position - feet together - arms spread - trunk forward and upward - head back - legs back - arms spread - trunk forward and upward.

1. Left (right) foot backward in long position - feet together.
2. The right (left) foot backward in long position - feet together.
3. Trunk backward and arms spread - trunk forward and arms spread - trunk down - trunk forward and spread - trunk.
4. Left knee - leg backward - trunk - knee - leg - foot - legs 1, 2.
5. Lie - knee - knee - leg - left - right - leg - leg - back - stand.



TABLE 63.

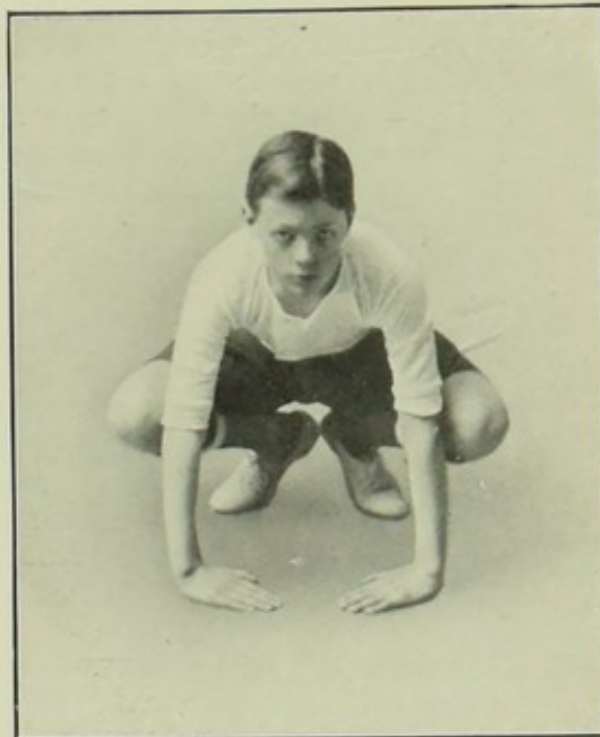
EXERCISES.

1. a. BREATHING. ARM RAISING FORWARD AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.
- b. FOOT PLACING FORWARD AND OUTWARD. HEEL RAISING AND KNEE BENDING. (HIPS FIRM.)
- c. HEEL RAISING WITH *slow* ARM STRETCHING UPWARD. (ARMS BEND.)
2. TRUNK BENDING BACKWARD AND FORWARD, ARM FLINGING. TRUNK BENDING DOWNWARD WITH ARM STRETCHING UPWARD. (ARMS ACROSS BEND.)
3. ARM STRETCHING SIDWAYS AND UPWARD, WITH A STEP FORWARD AND BACKWARD.
4. HEEL RAISING AND KNEE FULL BENDING. (FOOT FORWARD PLACE, HIPS FIRM.)
or, KNEE RAISING WITH ARM RAISING SIDWAYS.
5. ARM FLINGING WITH BACKWARD LUNGE. (ARMS ACROSS BEND.)

* *Prone falling.*†

6. TRUNK TURNING AND BENDING SIDWAYS. (FEET ASTRIDE, ARMS SIDWAYS STRETCH.)
7. a. TAPPING STEP. (HANDS ON HIPS.)
- b. MARCHING ON THE TOES WITH NECK REST.
- c. RUNNING *or* GAME.
8. BREATHING. (HIPS FIRM.)

COMMANDS.



Left knee and arms sideways—*raise*. Feet and arms—*change*.

Prone falling position—*place*, 1, 2.
Attention—1, 2.



b. With neck rest, heels—*raise*.
Forward—*march*. Class—*halt*,
1, 2, 3.
(On 3, the arms are brought to the side and the heels are lowered.)

TABLE 64.

EXERCISES.	COMMANDS.
<p>1. a. HEAD BENDING SIDWAYS. (FEET CLOSE, ARMS BEND.) b. OUTWARD LUNGE. (HALF LEFT TURN, HIPS FIRM.) c. BREATHING. ARM RAISING SIDWAYS AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.</p>	<p>b. (Feet full—<i>open</i>. With a half left (right) turn, Hips—<i>firm</i>.) Left (right) foot outward in lunge position—<i>place</i>. With turning, feet—<i>change</i>, 1, 2, 3. (On 1, the left foot is brought back ; on 2, a complete turn is made ; on 3, the right foot lunges outward.)</p>
<p>2. TRUNK BENDING BACKWARD, ARM STRETCHING UPWARD, TRUNK BENDING FORWARD, ARM STRETCHING SIDWAYS AND UPWARD, TRUNK BENDING DOWNWARD. (FEET ASTRIDE, ARMS BEND.)</p>	<p>Trunk backward—<i>bend</i>. Arms upward—<i>stretch</i>. Arms—<i>bend</i>. Trunk forward—<i>bend</i>. Arms sideways and upward—<i>stretch</i>, 1, 2, 3. Trunk downward—<i>bend</i>. Trunk forward and upward— <i>stretch</i>.</p>
<p>3. ALTERNATE ARM STRETCHING UPWARD AND DOWNWARD, WITH A STEP FORWARD AND BACK- WARD.</p>	<p>With a step forward, right arm upward, left arm downward— <i>stretch</i>. With a step backward, right arm downward, left arm upward—<i>stretch</i>.</p>
<p>4. HEEL RAISING AND ALTERNATE KNEE BENDING. (FEET ASTRIDE, NECK REST.)</p>	
<p>5. ARM RAISING AND LOWERING. (ARMS SIDWAYS RAISE, TRUNK FORWARD BEND.)</p>	
<p><i>Leg raising</i>.† (<i>Lying, Hips firm</i>.)</p>	<p>Legs—<i>raise</i>. Legs <i>lower</i>.</p>
<p>6. TRUNK TURNING, TRUNK BENDING SIDWAYS. (FOOT FORWARD PLACE, NECK REST.)</p>	<p>(With left foot forward, neck—<i>rest</i>.) Trunk to the left—<i>turn</i>. Trunk forward—<i>turn</i>. Feet and arms —<i>change</i>. Trunk to the right— <i>turn</i>. Trunk forward—<i>turn</i>. Feet and arms—<i>change</i>. Trunk to the left—<i>bend</i>. Trunk upward —<i>stretch</i>. Feet and arms—<i>change</i>. Trunk to the right—<i>bend</i>. Trunk upward—<i>stretch</i>. Feet and arms —<i>Attention</i>.</p>
<p>7. a. REEL STEP.† (HANDS ON HIPS.) b. SLOW MARCH. (HANDS ON HIPS.) c. GAME OR SKIPPING.</p>	<p>a. Reel step, right foot—<i>begin</i>. Class—<i>halt</i>.</p>
<p>8. BREATHING. (ATTENTION.)</p>	

† See Appendix A.



TABLE 64

KINESICS

GRANDS

1. Feet together, arms extended forward, hands flat, palms down.
2. Feet together, arms extended forward, hands flat, palms down. Arms raised to shoulder level, palms down.
3. Feet together, arms extended forward, hands flat, palms down. Arms raised to shoulder level, palms down. Arms raised to shoulder level, palms down.
4. Feet together, arms extended forward, hands flat, palms down. Arms raised to shoulder level, palms down. Arms raised to shoulder level, palms down.
5. Feet together, arms extended forward, hands flat, palms down. Arms raised to shoulder level, palms down. Arms raised to shoulder level, palms down.
6. Feet together, arms extended forward, hands flat, palms down. Arms raised to shoulder level, palms down. Arms raised to shoulder level, palms down.
7. Feet together, arms extended forward, hands flat, palms down. Arms raised to shoulder level, palms down. Arms raised to shoulder level, palms down.
8. Feet together, arms extended forward, hands flat, palms down. Arms raised to shoulder level, palms down. Arms raised to shoulder level, palms down.
9. Feet together, arms extended forward, hands flat, palms down. Arms raised to shoulder level, palms down. Arms raised to shoulder level, palms down.
10. Feet together, arms extended forward, hands flat, palms down. Arms raised to shoulder level, palms down. Arms raised to shoulder level, palms down.

1. Feet full open. With a half left right turn, hips level. Left right, feet outward in large position, arms with turning feet. Arms 1, 2, 3. One to the left, feet a little apart, one to the right, feet a little apart.
- Trunk backward, feet apart, arms spread wide. Arms 1, 2, 3. Trunk forward, feet close, arms always out, spread wide. 1, 2, 3. Trunk downward. Trunk forward and spread wide.
- With a step forward, right arm upward, left arm downward, arms. With a step backward, right arm downward, left arm upward, arms.
- Legs wide. Legs close.
- With left foot forward, back to the left, arms. Trunk forward, arms. Feet and arms close. Trunk to the right, arms. Trunk forward, arms. Feet and arms close. Trunk to the left, arms. Trunk forward, arms. Feet and arms close. Trunk to the right, arms. Trunk upward, arms. Feet and arms close.
- Step step, right foot to the left, arms.

TABLE 65

KINESTHESIA

OSSEALARY

1. a. Dorsum - Arm - Lower
 b. Hand - Forearm - Wrist -
 c. Neck - Shoulder - Elbow -
 d. Hip - Knee - Ankle -
 e. Foot - Heel - Toe
2. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
3. Arm - Forearm - Wrist -
 Hand - Heel - Toe
4. Left arm - Right arm -
 a. AD's -
 b. AD's -
5. Press - Pull - Push -
 Pull - Push - Pull -
 Push - Pull - Push - Pull
6. a. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
7. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
8. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
9. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
10. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
11. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
12. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
13. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
14. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
15. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
16. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
17. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
18. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
19. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other
20. To the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other

Have feeling and awareness
 with arm pointing to number
 1, 2

To the left - Forward -
 backward - Upward -
 downward - Left - Right -
 and other

With arm pointing forward and to
 the right, left arm forward to
 the right - Forward -
 backward - Upward -
 downward - Left - Right -
 and other

Press - Pull - Push -
 Pull - Push - Pull -
 Push - Pull - Push - Pull



The left arm - Forward -
 backward - Upward -
 downward - Left - Right -
 and other



TABLE 65.

EXERCISES.

1. a. BREATHING. ARM RAISING FORWARD, AND PARTING.
- b. HEAD TURNING. (HIPS FIRM, TRUNK FORWARD BEND.)
- c. KNEE BENDING AND STRETCHING, WITH ARM PARTING. (HEELS RAISE, ARMS FORWARD AND UPWARD RAISE.)
2. TRUNK BENDING BACKWARD AND FORWARD, ARM STRETCHING UPWARD. TRUNK BENDING DOWNWARD. (FEET ASTRIDE, ARMS BEND.)
3. ARM STRETCHING SIDWAYS, WITH TURNING TO THE LEFT OR RIGHT ABOUT.
4. LEG AND ARM RAISING SIDWAYS.
5. ARM SWINGING FORWARD AND SIDWAYS, FORWARD AND UPWARD. (FORWARD LUNGE, ARMS FORWARD AND UPWARD RAISE.)

*Prone falling.† Foot placing forward and backward.
or, Alternate leg raising.† (Lying.)*

6. a. TRUNK TURNING. ARM STRETCHING UPWARD. (ARMS BEND.)
- b. TRUNK BENDING SIDWAYS. (LEFT HAND HIP FIRM, RIGHT HAND NECK REST.)

7. *a. TOE AND HEEL STEP. (HANDS ON HIPS.)
- b. JUMPING OVER A ROPE WITH TURNING TO THE RIGHT OR LEFT ABOUT.
8. BREATHING. (HIPS FIRM.)

COMMANDS.

- c. Knee bending and stretching with arm parting by numbers—1, 2.

To the left (right) about turn, and arms sideways—*stretch*, 1, 2.

(With arm raising forward and upward, left foot forward in lunge position—*place*.) Arms forward and sideways—*swing*. Arms forward and upward—*swing*. Feet and arms—*change*. (Attention.)

(Prone falling position—*place*, 1, 2.) Foot placing forward and backward—1, 2. (Attention—1, 2.)



- a. Toe and heel step, left (right) foot—*begin*. Class—*halt*.
- b. (The about turn is made as the body is in the air just before landing. For turning to the *right*, the jump is taken from the *right* foot.)

† See Appendix A.

TABLE 66.

EXERCISES.

1. a. HEAD BENDING BACKWARD, WITH ARM TURNING OUTWARD AND INWARD.
 - b. FOOT PLACING FORWARD, OUTWARD AND SIDEWAYS. HEEL RAISING AND KNEE BENDING. (HIPS FIRM.)
 - c. BREATHING. (ATTENTION.)
 2. TRUNK BENDING BACKWARD AND FORWARD. (FEET CLOSE, NECK REST.)
 3. ARM STRETCHING DOWNWARD, FORWARD, SIDEWAYS AND UPWARD, *twice* in each direction.
 4. HEEL RAISING AND KNEE FULL BENDING. ARM STRETCHING FORWARD. (ARMS BEND.)
or, KNEE RAISING, FOOT BENDING AND STRETCHING. (NECK REST.)
 5. ARM FLINGING. (BACKWARD LUNGE, ARMS ACROSS BEND.)
- * *Trunk falling backward.*†
(*Kneeling.*)
6. TRUNK TURNING AND BENDING SIDEWAYS. (ARMS SIDEWAYS STRETCH.)
7. a. SCOTCH STEP.† (HANDS ON HIPS.)
 - b. FIFTH SKIPPING EXERCISE † *or* BALANCE MARCH.
 - c. RUNNING, *or* GAME.
 8. BREATHING. ARM RAISING FORWARD AND UPWARD, LOWERING SIDEWAYS AND DOWNWARD.

COMMANDS.

(With arms across bend, left foot backward in lunge position—*place.*) Arms—*fling.* Arms—*bend.* Feet and arms—*change.* (Attention.)



a. Scotch step, right foot—*begin.*
Class—*halt.*

† See Appendix A.

TABLE OF

EXERCISES

CONTENTS

1. A. Exercises for the
beginning and primary
grades in arithmetic and
grammar.
- B. Exercises for the
middle and high school
grades in arithmetic and
grammar.
2. Exercises for the
beginning and primary
grades in reading and
writing.
3. Exercises for the
middle and high school
grades in reading and
writing.
4. Exercises for the
beginning and primary
grades in science and
social studies.
5. Exercises for the
middle and high school
grades in science and
social studies.
6. Exercises for the
beginning and primary
grades in history and
geography.
7. Exercises for the
middle and high school
grades in history and
geography.
8. Exercises for the
beginning and primary
grades in English and
composition.
9. Exercises for the
middle and high school
grades in English and
composition.

Track record
Score
Date



With the left hand, hold the
pen and write the number
1, 2, 3, 4, 5, 6, 7, 8, 9, 0
on the lines below.

TABLE 66

EXERCISES

DESCRIPTION

1. Stand with feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight, feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight, feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight.
2. Stand with feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight, feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight.
3. Stand with feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight, feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight.
4. Stand with feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight, feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight.
5. Stand with feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight, feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight.
6. Stand with feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight, feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight.
7. Stand with feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight, feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight.
8. Stand with feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight, feet together, arms at sides, head erect, chest expanded, abdomen contracted, back straight.

With arms across head, left foot backward to image position - Head - Arms - Body - Arms - Feet and arms - Attention.



Stand with right foot -

TABLE 67.

EXERCISES.

1. a. BREATHING. ARM RAISING
SIDWAYS AND UPWARD,
LOWERING SIDWAYS AND
DOWNWARD.
 - b. ALTERNATE HIPS FIRM AND
NECK REST WITH FEET
CLOSING AND OPENING.
 - c. OUTWARD LUNGE. (HALF LEFT
TURN, HIPS FIRM.)
 2. TRUNK BENDING BACKWARD AND
FORWARD. (LEFT HAND HIP
FIRM, RIGHT HAND NECK REST.)
 3. ALTERNATE ARM STRETCHING
SIDWAYS AND FORWARD, WITH
A STEP TO THE RIGHT AND LEFT.
 - 4.* HEEL RAISING AND KNEE BEND-
ING. HEAD TURNING. (FOOT
FORWARD PLACE, ARMS BEND.)
 5. ARM RAISING UPWARD AND
LOWERING (FEET ASTRIDE,
ARMS FORWARD RAISE, TRUNK
FORWARD BEND.)
- Side falling,† (Hip firm.)
or, Trunk backward falling.
(Kneeling. Arms across bend.)*
6. a. TRUNK TURNING, ARM FLING-
ING. (FEET CLOSE, ARMS
ACROSS BEND.)
 - b. TRUNK BENDING SIDWAYS.
(FEET ASTRIDE, ARMS UP-
WARD STRETCH.)
 7. a. REEL STEP. (HANDS ON HIPS.)
 - b. "STORK MARCH." (HANDS ON
HIPS.)
 - c. GAME or SKIPPING.
 8. BREATHING. (HANDS ON CHEST.)

COMMANDS.

Trunk backward — bend. Trunk
forward — bend.
Trunk upward — stretch. Arms —
change.



With the left (right) hand, hip
firm, side falling position — place,
1, 2, 3. Turn — over, 1, 2. Atten-
tion — 1, 2, 3.
(Turn over, 1, 2. On 1, the prone
falling position is taken; on 2,
the side falling position facing in
the opposite direction.)

† See Appendix A.

TABLE 68.

EXERCISES.

1. a. HEAD BENDING SIDWAYS.
(FOOT FORWARD PLACE,
HIPS FIRM.)
b. HEEL RAISING WITH *slow* ARM
STRETCHING UPWARD.
(ARMS BEND.)
c. BREATHING. (HIPS FIRM.)
 2. a. TRUNK BENDING BACKWARD,
ARM FLINGING. (ARMS
ACROSS BEND.)
b. TRUNK BENDING FORWARD
AND DOWNWARD. (ARMS
UPWARD STRETCH.)
 3. ARM STRETCHING UPWARD WITH
TURNING, TO THE RIGHT, OR
LEFT, ABOUT.
 4. HEEL RAISING AND ALTERNATE
KNEE BENDING. (FEET ASTRIDE,
ARMS BEND.)
or, KNEE RAISING, WITH NECK
REST.
 5. ARM RAISING AND LOWERING
SIDWAYS. (FORWARD LUNGE,
ARMS SIDWAYS RAISE.)
- * *Prone falling, leg raising.*†
6. TRUNK TURNING AND BENDING
SIDWAYS. (NECK REST.)
 7. a. CROSSWISE STEP. (HANDS ON
HIPS.)
b. JUMPING *or* SKIPPING.
 8. BREATHING. ARM RAISING SIDE-
WAYS.

COMMANDS.



With left knee raise, neck—*rest*.
Knee and arms—*change*.

(With arm raising sideways, left
(right) foot forward in lunge
position — *place*.) Arms — *raise*,
Arms — *lower*. Feet and arms—
change. (Attention.)

(Prone falling position — *place*, 1, 2.)
Right (left) leg — *raise*.
Leg — *lower*. (Attention.)

TABLE 60.

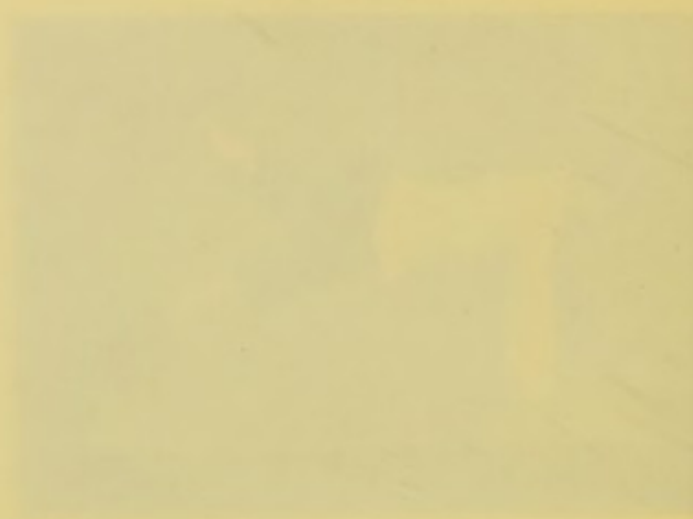
REMARKS	POSITION
<p>1. At 10:00 AM. ...</p> <p>2. ...</p> <p>3. ...</p>	<p>With ...</p> <p>...</p> <p>...</p>
<p>4. ...</p> <p>5. ...</p> <p>6. ...</p>	<p>With ...</p> <p>...</p> <p>...</p>
<p>7. ...</p> <p>8. ...</p> <p>9. ...</p>	<p>With ...</p> <p>...</p> <p>...</p>
<p>10. ...</p> <p>11. ...</p> <p>12. ...</p>	<p>Log ...</p> <p>...</p> <p>...</p>
<p>13. ...</p> <p>14. ...</p> <p>15. ...</p>	<p>...</p> <p>...</p> <p>...</p>
<p>16. ...</p> <p>17. ...</p> <p>18. ...</p>	<p>...</p> <p>...</p> <p>...</p>
<p>19. ...</p> <p>20. ...</p> <p>21. ...</p>	<p>...</p> <p>...</p> <p>...</p>
<p>22. ...</p> <p>23. ...</p> <p>24. ...</p>	<p>...</p> <p>...</p> <p>...</p>

TABLE 08.

EXERCISES.

CHARACTERS.

1. A slow, steady march.
Feet - normal step.
Arms - 1/2.
2. A slow, steady march.
Feet - normal step.
Arms - 1/2.
3. A slow, steady march.
Feet - normal step.
Arms - 1/2.
4. A slow, steady march.
Feet - normal step.
Arms - 1/2.
5. A slow, steady march.
Feet - normal step.
Arms - 1/2.
6. A slow, steady march.
Feet - normal step.
Arms - 1/2.
7. A slow, steady march.
Feet - normal step.
Arms - 1/2.
8. A slow, steady march.
Feet - normal step.
Arms - 1/2.
9. A slow, steady march.
Feet - normal step.
Arms - 1/2.
10. A slow, steady march.
Feet - normal step.
Arms - 1/2.
11. A slow, steady march.
Feet - normal step.
Arms - 1/2.
12. A slow, steady march.
Feet - normal step.
Arms - 1/2.
13. A slow, steady march.
Feet - normal step.
Arms - 1/2.
14. A slow, steady march.
Feet - normal step.
Arms - 1/2.
15. A slow, steady march.
Feet - normal step.
Arms - 1/2.
16. A slow, steady march.
Feet - normal step.
Arms - 1/2.
17. A slow, steady march.
Feet - normal step.
Arms - 1/2.
18. A slow, steady march.
Feet - normal step.
Arms - 1/2.
19. A slow, steady march.
Feet - normal step.
Arms - 1/2.
20. A slow, steady march.
Feet - normal step.
Arms - 1/2.



With arms held out, feet - normal step - march.

With arms hanging sideways, left hand - feet forward by large amount. Arms - normal. Feet and arms - march. (Attention.)

Marching posture - arms - 1/2. Feet - normal. Arms - 1/2. Feet and arms - march. (Attention.)

TABLE 69.

EXERCISES.	COMMANDS.
<p>1. a. BREATHING. (HANDS ON CHEST.) b. FOOT PLACING FORWARD, OUTWARD AND SIDWAYS, HEEL RAISING AND KNEE BENDING. (NECK REST.) c. HEAD BENDING BACKWARD AND FORWARD.</p>	<p>b. With heel raising and knee bending, foot placing forward, outward and sideways, left (right) foot—<i>begin</i>, 1, 2, 3, 4, 5, 6, etc.</p>
<p>2. a. TRUNK BENDING BACKWARD. (TOE SUPPORT BACKWARD PLACE, NECK REST.) b. TRUNK FORWARD AND DOWNWARD BEND. (ARMS UPWARD STRETCH.)</p>	<p>a. (With neck rest, left foot backward on the toe—<i>place</i>.) Trunk backward—<i>bend</i>. Trunk upward—<i>stretch</i>. Feet and arms <i>change</i>.—(Attention.)</p>
<p>3. ALTERNATE ARM STRETCHING UPWARD AND DOWNWARD, WITH TURNING TO THE RIGHT AND LEFT.</p>	<p>With turning to the left, left arm upward, right arm downward—<i>stretch</i>. With turning to the right, right arm upward, left arm downward—<i>stretch</i>.</p>
<p>4. LEG CIRCLING. (HIPS FIRM.) <i>or</i>, LEG RAISING SIDWAYS, WITH ARM RAISING UPWARD. (ARMS SIDWAYS RAISE.)</p>	<p>Leg circling by numbers, left (right) leg—<i>begin</i>, 1, 2, 3, 4. (On 1, the leg is raised forward; on 2, it takes the sideways raise position; on 3, the backward raise position; on 4, it is brought to Attention.)</p>
<p>5. ARM SWIMMING. (ARMS IN SWIMMING POSITION, TRUNK FORWARD BEND.) <i>Leg raising</i>.† (<i>Lying</i>.) <i>or</i>, <i>Side falling</i>. (<i>Neck rest</i>.)</p>	
<p>6. TRUNK TURNING, WITH ARM RAISING FORWARD AND UPWARD, AND LOWERING SIDWAYS AND DOWNWARD.</p>	<p>With arm raising forward and upward, trunk to the left (right)—<i>turn</i>. With arm lowering sideways and downward, trunk forward—<i>turn</i>.</p>
<p>7. a. SHUFFLE STEP.† (HANDS ON HIPS.) b. MARCHING WITH ARM STRETCHING UPWARD, FORWARD AND DOWNWARD. c. GAME <i>or</i> RUNNING.</p>	<p>a. Shuffle step, right (left) foot—<i>begin</i>. b. With arm stretching upward, forward & downward, forward—<i>march</i>.</p>
<p>8. BREATHING. ARM RAISING SIDWAYS AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.</p>	

† See Appendix A.

TABLE 70.

EXERCISES.

1. a. HEAD TURNING WITH *slow* ARM STRETCHING SIDWAYS. (ARMS BEND.)
b. TOE LUNGE BACKWARD. (HIPS FIRM.)
c. BREATHING. ARM RAISING FORWARD, AND PARTING.
2. TRUNK BENDING BACKWARD, FORWARD AND DOWNWARD. (FEET ASTRIDE, ARMS UPWARD, STRETCH.)
3. ARM STRETCHING FORWARD AND DOWNWARD, SIDWAYS AND DOWNWARD, UPWARD AND DOWNWARD, *twice* in each direction.
4. KNEE RAISING, LEG STRETCHING, BACKWARD AND FORWARD. (HIPS FIRM.)
5. ARM FLINGING WITH OUTWARD LUNGE. (ARMS ACROSS BEND.)
Prone falling, Arm bending.†
or, Trunk falling backward,†
(Kneeling, Neck rest.)
6. *SIDWAYS LUNGE. (HIPS FIRM.)
7. a. SCOTCH STEP. (HANDS ON HIPS.)
b. UPWARD JUMP WITH TURNING TO THE RIGHT OR LEFT ABOUT.
8. BREATHING. (ATTENTION.)

COMMANDS.

- b. **Left (right) foot backward in toe lunge position—place. Feet—change, 1, 2. Recover—place.**
(In this position the *toe*, and not the whole foot, rests on the ground, the knee and ankle being fully stretched.)
Trunk backward—bend. Trunk forward—bend. Trunk downward—bend. Trunk forward—stretch. Trunk downward—bend. Trunk forward and upward—stretch.

Left (right) knee—raise. Leg backward—stretch. Knee—bend. Leg forward—stretch. Knee—bend. Knee—change.

- (Prone falling position—*place, 1, 2.*)
Arm bending and stretching by numbers—1, 2. (Attention.)
Right (left) foot sideways in lunge position—place. Recover—place.



- b. **With turning to the left (right) about, upward—jump, 1, 2, (3, 4), 5, 6.**
(The about turn is made before the feet touch the ground.)

† See Appendix A.

TABLE 71.


KEYWORD	COMMANDS
<p>1. A. ... B. ... C. ...</p>	<p>With oblique arm ... left (right) foot ... large position ... arms ... 1, 2.</p>
<p>2. ...</p>	<p>Trunk backward— upward— Trunk backward— Trunk upward— upward— and downward— Trunk forward and upward— Foot and arms— Trunk forward and downward— Trunk forward and upward—</p>
<p>3. ...</p>	
<p>4. ...</p>	
<p>5. ...</p>	
<p>6. ...</p>	
<p>7. ...</p>	
<p>8. ...</p>	

TABLE TO

EXERCISES

GRANDS

1. Head forward - neck - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

1. Left right, left backward in the large position - class - Feet - change - 1, 2. Recover - place the feet in the position of the feet and the whole body in the ground the feet and whole being fully extended.
- Trunk backward - level. Trunk forward - level. Trunk downward - level. Trunk forward - level. Trunk downward - level. Trunk forward and upward - level.

- Left - right, knee - level. Leg backward - level. Knee - level. Leg forward - level. Knee - level. Knee - change.

- From falling position - class - 1, 2. Arm bending and stretching by numbers - 1, 2. Attention. Right - left foot sideways in large position - class - Recover.



- With turning to the left (right) about, upward - class - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

TABLE 71.

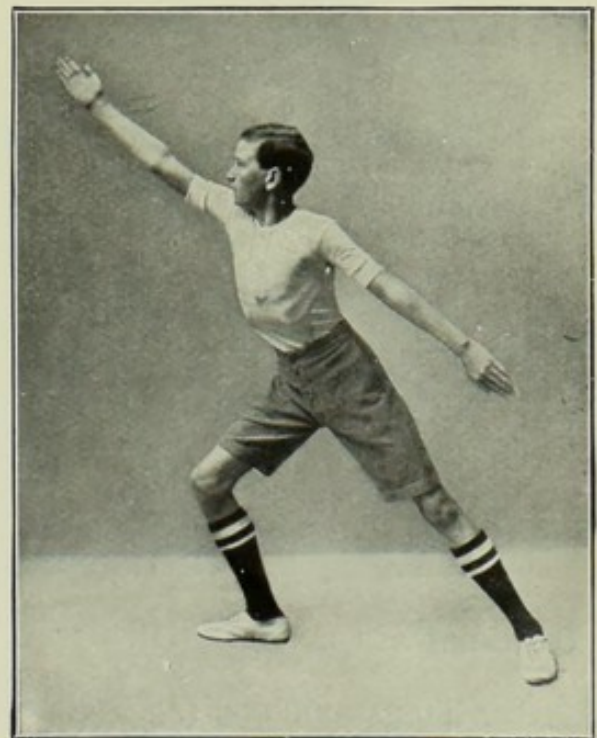
EXERCISES.

COMMANDS.

1. a. BREATHING. (HANDS ON CHEST.)
 b. HEAD TURNING WITH ALTERNATE ARM FLINGING. (ARMS ACROSS BEND, TRUNK FORWARD BEND.)
 *c. OUTWARD LUNGE, WITH OBLIQUE ARM STRETCHING. (ARMS BEND.)
2. TRUNK BENDING BACKWARD. (FOOT FORWARD PLACE, NECK REST.) TRUNK BENDING FORWARD AND DOWNWARD. (FOOT FORWARD PLACE, ARMS UPWARD STRETCH.)
3. ARM STRETCHING UPWARD, FORWARD AND DOWNWARD, WITH TURNING TO THE LEFT (RIGHT) ABOUT, ON *downward*.
4. HEEL RAISING AND KNEE FULL BENDING, ARM RAISING FORWARD AND UPWARD, LOWERING SIDWAYS AND DOWNWARD.
5. ARM RAISING AND LOWERING. (ARMS SIDWAYS RAISE, TRUNK FORWARD BEND.)
Side falling.† (Arm upward stretch.)
6. TRUNK TURNING AND BENDING SIDWAYS. (FEET CLOSE, NECK REST.)
7. a. SHUFFLE STEP. (HANDS ON HIPS.)
 b. SIXTH SKIPPING EXERCISE,† or BALANCE MARCH.
 c. GAME.
8. BREATHING. ARM RAISING SIDEWAYS.

- c. With oblique arm stretching, left (right) foot outward in lunge position—*place*. Feet and arms—*change*, 1, 2.

Trunk backward—*bend*. Trunk upward—*stretch*. Feet and arms—*change*. Trunk backward—*bend*. Trunk upward—*stretch*. Arms upward—*stretch*. Trunk forward and downward—*bend*. Trunk forward and upward—*stretch*. Feet and arms—*change*. Trunk forward and downward—*bend*. Trunk forward and upward—*stretch*.



† See Appendix A.

TABLE 72.

EXERCISES.

1. a. HEAD BENDING SIDWAYS.
(FEET CLOSE.)
b. FORWARD LUNGE, WITH FOOT CHANGING FORWARD. (HIPS FIRM.)
c. BREATHING. ARM RAISING SIDWAYS.
2. TRUNK BENDING BACKWARD, FORWARD AND DOWNWARD. (ARMS UPWARD STRETCH.)
3. ALTERNATE ARM STRETCHING UPWARD AND SIDWAYS, FORWARD AND DOWNWARD.
4. LEG AND ARM CIRCLING.
5. *ARM PARTING. (TOE LUNGE BACKWARD, ARMS FORWARD RAISE.)

*Prone falling, Leg raising.†
or, Prone falling, Arm bending.*

6. SIDWAYS LUNGE. (HIPS FIRM.)
7. a. TOE AND HEEL STEP. (HANDS ON HIPS.)
b. JUMPING *or* MARCHING WITH ARM STRETCHING FORWARD AND SIDWAYS.
c. GAME *or* SKIPPING.
8. BREATHING. ARM RAISING FORWARD, AND PARTING.

COMMANDS.

- b. (Feet—*change*, 1, 2. On 1, the back leg is brought forward to Attention; on 2, the *same* leg takes the forward lunge position.)

Leg and arm circling, left (right) foot—*begin*, 1, 2, 3, 4.

(Arm circling. On 1 and 2, the arms are raised forward and upward; on 3 and 4, they are lowered sideways and downward.)

(With arm raising forward, left (right) foot backward in toe lunge position—*place*.) Arm parting by numbers—1, 2. Feet and arms—*change*. (Attention.)





TABLE 72

EXERCISE	DIRECTIONS
1. Stand with feet together, arms at sides.	Breathe in and out 4 times. Then lift right leg to shoulder height, hold for 2 seconds, lower, repeat with left leg.
2. Stand with feet together, arms at sides.	Breathe in and out 4 times. Then lift right leg to shoulder height, hold for 2 seconds, lower, repeat with left leg.
3. Stand with feet together, arms at sides.	Breathe in and out 4 times. Then lift right leg to shoulder height, hold for 2 seconds, lower, repeat with left leg.
4. Stand with feet together, arms at sides.	Leg and arm moving, left (right) leg - right 1, 2, 3, 4. Then change, left 1, 2, 3, 4. Then change, right 1, 2, 3, 4. Then change, left 1, 2, 3, 4. (Breathes in and out)
5. Stand with feet together, arms at sides.	With arm raised forward, left (right) leg backward in the same position - right 1, 2, 3, 4. Then change, left 1, 2, 3, 4. (Breathes in and out)
6. Stand with feet together, arms at sides.	Breathe in and out 4 times. Then lift right leg to shoulder height, hold for 2 seconds, lower, repeat with left leg.
7. Stand with feet together, arms at sides.	Breathe in and out 4 times. Then lift right leg to shoulder height, hold for 2 seconds, lower, repeat with left leg.
8. Stand with feet together, arms at sides.	Breathe in and out 4 times. Then lift right leg to shoulder height, hold for 2 seconds, lower, repeat with left leg.
9. Stand with feet together, arms at sides.	Breathe in and out 4 times. Then lift right leg to shoulder height, hold for 2 seconds, lower, repeat with left leg.

APPENDIX A

SUPPLEMENTARY PHYSICAL EXPERIMENTS

PHYSICAL EXPERIMENT

The following experiment is designed to determine the effect of temperature on the rate of reaction between hydrogen peroxide and potassium iodide.

1. Preparation of Standard Solutions

The solutions used in this experiment are prepared as follows: 100 ml of 0.1 M potassium iodide is prepared by dissolving 16.6 g of KI in water in a 100 ml volumetric flask. The volume must not be less than 100 ml. The solution is then diluted to 100 ml with water. The solution is then used for the purpose of "fixed time" and progressive rate for which by allowing the passage of time.

Procedure

- 1. Prepare 100 ml of 0.1 M KI solution.
- 2. Prepare 100 ml of 0.1 M H₂O₂ solution.



Fig. 1

2. Rate of Reaction

The rate of reaction is determined by measuring the volume of iodine liberated in a fixed time.



Fig. 2

The rate of reaction is determined by measuring the volume of iodine liberated in a fixed time. The volume of iodine liberated is measured by the amount of sodium thiosulfate solution required to decolorize the iodine. The rate of reaction is then calculated from the volume of iodine liberated and the time taken for the reaction to occur.

The rate of reaction is determined by measuring the volume of iodine liberated in a fixed time. The volume of iodine liberated is measured by the amount of sodium thiosulfate solution required to decolorize the iodine. The rate of reaction is then calculated from the volume of iodine liberated and the time taken for the reaction to occur.



APPENDIX A.

SUPPLEMENTARY PHYSICAL EXERCISES.

ABDOMINAL EXERCISES.

It will be obvious that these exercises, with the possible exception of the first, are inappropriate for girls unless they are wearing suitable gymnastic costume.

1. *Trunk falling backward*—(kneeling position).

The children first kneel down, and the body is then inclined backward from the knees. The spine must not be bent, the back must be straight, and the head must be kept in line with the body (see Fig. 64). This exercise is most easily performed with the hands in the position of "Hips firm," and progression may be made by altering the position of the arms.

COMMANDS :

TRUNK BACKWARD—*fall*.

TRUNK UPWARD—*raise*.



FIG. 64.

2. *Lying—Alternate leg raising*.

The children first lie down on their backs, with the heels together. The legs are raised in turn from the floor, the knees being kept straight (see Fig. 65). The arms may be in the "Hips firm" position, or in the "Neck rest" or "Upward stretch" positions.



COMMANDS :

LEFT (RIGHT) LEG—*raise*.

FEET—*change 1, 2*.

(On 1 the left leg is lowered and on 2 the right leg is raised.)

FIG. 65.

3. Lying—Leg raising.



FIG. 66.

The children lie flat on the floor as in the preceding exercise. On the command "Legs—raise," both legs are simultaneously lifted from the floor (see Fig. 66). The legs should at first be raised as far as possible to about a right angle, the knees being kept straight. Later on they should be raised to about an angle of 45° with the floor. Progression is also made by increasing the time during which they are maintained in position. The arms should at first be in the "Hips firm" position, and progression may be made from this to more difficult positions of the arms.

COMMANDS :

LEGS—raise.
LEGS—lower.

4. Prone Falling.

This position is arrived at by two movements. (1) The heels are raised and the knees bent as far as possible, while the hands are placed on the ground with the arms on the inner side of the legs, the fingers being flat on the floor and directed somewhat inwards (see Fig. 67). (2) The feet and legs are then made to spring back so that the body rests on the palms of the hands and the toes (see Fig. 68).

In the second position care must be taken that the knees are not bent and the body is straight. The head should not be allowed to fall forward, and there must be no "hollow back."

The position of "Attention" is resumed by reversing the movements.

COMMANDS :

PRONE FALLING POSITION—*place* 1, 2.
ATTENTION—1, 2.



FIG. 67.

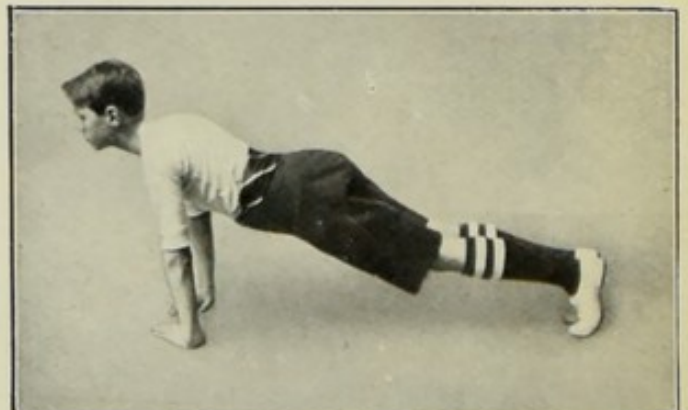


FIG. 68.

1. The first step in the process of...
The first step in the process of...
The first step in the process of...

2. The second step in the process of...
The second step in the process of...
The second step in the process of...



3. The third step in the process of...
The third step in the process of...
The third step in the process of...

4. The fourth step in the process of...
The fourth step in the process of...
The fourth step in the process of...

5. The fifth step in the process of...
The fifth step in the process of...
The fifth step in the process of...



6. The sixth step in the process of...
The sixth step in the process of...
The sixth step in the process of...

7. The seventh step in the process of...
The seventh step in the process of...
The seventh step in the process of...

8. The eighth step in the process of...
The eighth step in the process of...
The eighth step in the process of...

The authors are indebted to the Director of the National Bureau of Standards for the loan of the apparatus used in this work. The authors are also indebted to the National Bureau of Standards for the loan of the apparatus used in this work. The authors are also indebted to the National Bureau of Standards for the loan of the apparatus used in this work.



Fig. 1

References

- 1. J. R. Van Wazer, *Inorganic Chemistry*, 2nd ed., McGraw-Hill, New York, 1955, p. 100.
- 2. J. R. Van Wazer, *Inorganic Chemistry*, 2nd ed., McGraw-Hill, New York, 1955, p. 101.
- 3. J. R. Van Wazer, *Inorganic Chemistry*, 2nd ed., McGraw-Hill, New York, 1955, p. 102.



Fig. 2

The authors are indebted to the Director of the National Bureau of Standards for the loan of the apparatus used in this work. The authors are also indebted to the National Bureau of Standards for the loan of the apparatus used in this work.

References

- 1. J. R. Van Wazer, *Inorganic Chemistry*, 2nd ed., McGraw-Hill, New York, 1955, p. 100.
- 2. J. R. Van Wazer, *Inorganic Chemistry*, 2nd ed., McGraw-Hill, New York, 1955, p. 101.



Fig. 3

5. *Prone falling with Foot placing forward and backward.*

Prone falling may occasionally be taken quickly, especially with young children, and may be varied by "jumping" the legs forward and backward from the second to the first position several times in quick succession.

COMMANDS :

PRONE FALLING POSITION—*place* 1, 2. FOOT PLACING FORWARD AND BACKWARD—1, 2.

6. *Prone falling with Leg raising.*

The Prone falling position is first taken, and the legs are then raised alternately, the knees being kept straight (see Fig. 69).

COMMANDS :

LEFT (RIGHT) LEG—*raise.*

LEG—*lower.*

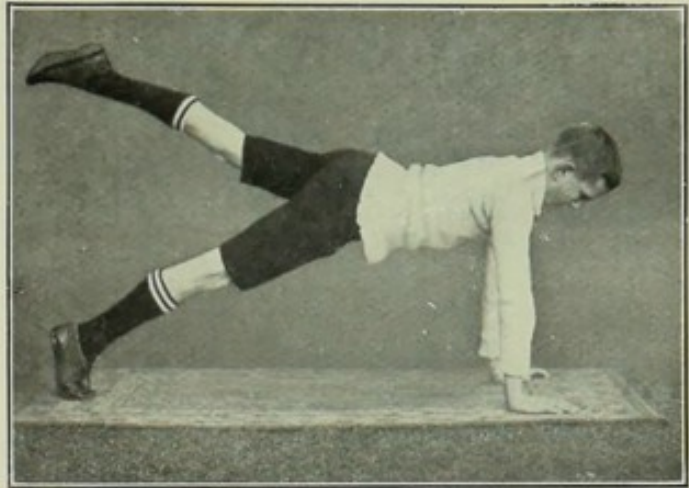


FIG. 69.

7. *Side falling.*

This exercise follows Prone falling. After the Prone falling position has been taken, the body is turned to the right or left, facing forward or backward, so that the whole weight rests on one hand only (see Fig. 70). The free arm may be in the "Hip firm," or "Neck rest," or "Upward stretch" position. Care must be taken that only the lower foot touches the floor, the upper foot resting upon the lower one.

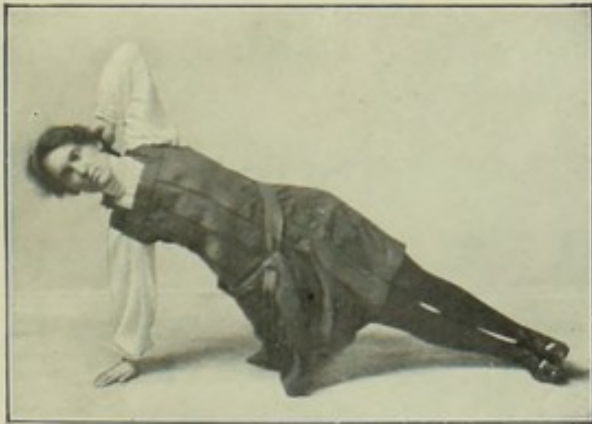


FIG. 70.

COMMANDS :

WITH LEFT (RIGHT) HAND HIP FIRM, SIDE FALLING POSITION—*place* 1, 2, 3.

TURN—*over* 1, 2.

(On 1 and 2, the Prone falling position is taken; on 3, the body is turned into the side falling position with the left hand Hips firm.)

8. *Prone falling—Arm bending.*

The Prone falling position is first assumed in the usual manner, and the arm bending and stretching is taken from this position.

COMMANDS :

ARMS—*bend.* ARMS—*stretch.*

On the Command *Arms bend*, the body is lowered, with the elbows turned out and the back straight until the face almost touches the floor. On the Command *Arms stretch* the arms are straightened, and the Prone falling position is resumed.

SKIPPING EXERCISES.

For girls, skipping will be found particularly valuable when only a limited amount of time can be spent in vigorous movement. It also has the advantage of giving exercise to all parts of the body at the same time. The rope should be



FIG. 71.

turned backwards, and the arms kept fully extended on a level with the shoulders, so that the chief movement takes place at the shoulder joint and not at the wrist (see Fig. 71). Children should not be allowed to turn the rope forwards, or to bend the elbows and so keep the arms close to the body, because such methods tend to constrict and narrow the chest. The skipping should be done with flexible knees and there should be a small rebound between each skipping step to prevent any jarring. Most children enjoy skipping and will readily practise it out of school in their free time.

1. Feet at the position of Attention. Spring on the toes, keeping both feet together, and allow the rope to pass underneath—then give a small rebound with bent knees, the toes being slightly raised from the floor before the second skip is begun.

2. The feet are alternately raised in front with pointed toes and straight knees—while two hops (one and a rebound) are given on the other foot.

3. This exercise is similar to No. 2, but the toe of the foot which is raised should tap the floor twice each time the rope is turned.

4. Give two hops on the left foot.

On the first hop place the right foot behind the left leg, the knee being well turned out.

On the second hop stretch the right leg outward with the knee stretched.

Repeat, hopping on the right foot.

5. Hop and rebound, crossing the feet alternately, the right foot may first be in front, and then the left. The feet are uncrossed and changed after the rebound each time the rope is turned.

6. Hop on the left foot and stretch the right leg in front with pointed toe.

Repeat the hop on the left foot and raise the right knee keeping the toe pointed to the floor. Change the feet and repeat, hopping on the right foot.

DANCING STEPS.

The value of introducing dancing steps into any scheme of physical training as an additional exercise especially for girls, or even in some cases for boys, is becoming widely recognised. Dancing, if properly taught, is one of the most useful means of promoting a graceful carriage with free, easy movements, and is far more suited to girls than many of the exercises and games borrowed from boys. As in other balance exercises, the nervous system acquires a more perfect control of the muscles, and in this way a further development of various brain centres is brought about. The educational results of dancing differ somewhat from those obtained by formal

THE HISTORY OF THE UNITED STATES

The first part of the history of the United States is the period of the early settlement of the continent.



The second part of the history of the United States is the period of the American Revolution.

The third part of the history of the United States is the period of the early republic.

The fourth part of the history of the United States is the period of the westward expansion.

The fifth part of the history of the United States is the period of the Civil War.

The sixth part of the history of the United States is the period of Reconstruction.

The seventh part of the history of the United States is the period of the Gilded Age.

The eighth part of the history of the United States is the period of the Progressive Era.

physical exercises, which at times become monotonous notwithstanding the care taken in arranging the lessons.

Dancing steps add very greatly to the interest and recreative effect of the lesson, the movements are less methodical and exact and are more natural; if suitably chosen they appeal strongly to the imagination and act as a decided mental and physical stimulus and exhilarate in a wholesome manner both body and mind.

Dancing is here, of course, considered solely from the educational standpoint, and it must be remembered that, though its value is very great, and in some ways unique, it can never replace the formal lessons in physical exercises, but should be used to supplement them.

Dances suitable for teaching in elementary schools require great care and discrimination in their selection. It is desirable that such dances should consist of graceful movements, that body and arms, in addition to the feet and legs, should have their appropriate and co-ordinated actions, and that they should quite naturally express the joy and spirit of the child and should not be unduly formal or restrained. Further, it is important that they should be comparatively simple and easy to teach. Dances which include clumsy inelegant actions, or which lend themselves readily to boisterous and uncontrolled movements, should be avoided, as should also those more difficult and stately dances whose chief excellence lies in the slow graceful manner in which the various movements, are carried out. The latter require specially experienced teachers, and unless wisely taught are apt to lead to habits of self-consciousness and "posturing," which cannot have a healthy mental or moral effect.

Dances such as the Pavane, Minuet or Gavotte are not as a rule suitable for children in elementary schools, neither is it desirable to teach the ordinary ball-room dancing. Morris dances are easily learned and very enjoyable. They are perhaps better suited for the younger children (boys or girls). The "steps" are few, the movements are of the large and massive type, and the accompanying music is both tuneful and rhythmical. Although the recreative effect of Morris dances is great, and although the child does indeed acquire through them some additional control over his body and limbs, yet the movements can scarcely be considered graceful or beautiful, and therefore other dances should also be taught, especially to the older children. There are numerous forms of the Reel, the Lilt, the Jig; there are national and peasant dances such as the Welsh Dance; there are many Country dances, such as Sir Roger de Coverley or the Swedish dance, which, although consisting of somewhat more formal steps and movements, are yet sufficiently simple for elementary schools, and which combine the healthy gaiety of the Morris dances with the more controlled and graceful movements which all educational dances should furnish.

It is beyond the province of this Syllabus to describe any complete dances, but a few examples of typical steps taken from various national or folk dances are given in detail below. They will be found in the Tables of Series C, but they need not be taught to the older girls only. They may be taken on the spot, after the class has opened ranks.

All steps should be as light as possible and the toes and knees must be turned out—the position of the knees being especially important in all dance movements. The backs of the hands should be placed on the hips with the wrists turned to the front, this position will be found better than the drill position of "Hips firm."

COMMAND :

HANDS ON HIPS—*place*.

1. *Tapping Step.*

(a) Hop on the left foot four times; at the same time extend the right foot to the front with the knee straight and tap four times on the floor with the point of the toe, keeping time with the hops on the left foot.

(b) Change the feet with a slight spring and repeat the hopping and tapping.

2. *Crosswise Step.*

FIG. 72.

(a) Start with the feet in the position of attention, give a slight spring and land with the right foot in front of the left, the feet being slightly crossed (see Fig. 72).

(b) Repeat the spring and change the feet so that the left foot comes to the front.

Between each spring bend the knees slightly.

(c) Then repeat three times, *without* the knee bending.

Repeat the whole step beginning with the left foot in front.

3. *Reel Step.*

(a) Hop on the left foot, extending the right leg to the side with a straight knee and pointed toe.

(b) Repeat the hop on the left foot, bringing the right knee up in front with the toe pointing to the floor.

(c) Repeat the hop on the left foot, and stretch the right leg so that the toe touches the floor in front, as in the Tapping step.

(d) Repeat (b).

Change the feet with a slight spring and repeat (a), (b), (c), (d), hopping on the right foot.

4. *Scotch Step.*

Hop on the left foot four times.

On the first hop—extend the right foot to the side as in the Reel step, the step must however be marked on the floor with the whole of the foot. The knee must be bent in doing this movement.

On hops 2, 3, and 4, cross the right leg over the left, first in front, then behind, then in front again. The right knee must be well turned out, and the right foot must pass to the left side of the left leg on the second, third, and fourth hops.

Change the feet with a slight spring and repeat, hopping on the right foot.

5. *Toe and Heel Step.*

Hop on the left foot four times.

(a) On the first hop—extend the right leg to the side with the toe and knee turned *in* (see Fig. 73).

(b) On the second hop—turn the right toe and knee *out*, placing the heel where the toe was in (a) (see Fig. 74).

(c) On the third hop—place the right toe in front of the left foot, keeping the knee well turned out.



The first of these is the...
The second is the...
The third is the...
The fourth is the...
The fifth is the...
The sixth is the...
The seventh is the...
The eighth is the...
The ninth is the...
The tenth is the...
The eleventh is the...
The twelfth is the...
The thirteenth is the...
The fourteenth is the...
The fifteenth is the...
The sixteenth is the...
The seventeenth is the...
The eighteenth is the...
The nineteenth is the...
The twentieth is the...
The twenty-first is the...
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The twenty-third is the...
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The twenty-seventh is the...
The twenty-eighth is the...
The twenty-ninth is the...
The thirtieth is the...
The thirty-first is the...
The thirty-second is the...
The thirty-third is the...
The thirty-fourth is the...
The thirty-fifth is the...
The thirty-sixth is the...
The thirty-seventh is the...
The thirty-eighth is the...
The thirty-ninth is the...
The fortieth is the...
The forty-first is the...
The forty-second is the...
The forty-third is the...
The forty-fourth is the...
The forty-fifth is the...
The forty-sixth is the...
The forty-seventh is the...
The forty-eighth is the...
The forty-ninth is the...
The fiftieth is the...
The fifty-first is the...
The fifty-second is the...
The fifty-third is the...
The fifty-fourth is the...
The fifty-fifth is the...
The fifty-sixth is the...
The fifty-seventh is the...
The fifty-eighth is the...
The fifty-ninth is the...
The sixtieth is the...
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The sixty-fifth is the...
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The sixty-seventh is the...
The sixty-eighth is the...
The sixty-ninth is the...
The seventieth is the...
The seventy-first is the...
The seventy-second is the...
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The seventy-fourth is the...
The seventy-fifth is the...
The seventy-sixth is the...
The seventy-seventh is the...
The seventy-eighth is the...
The seventy-ninth is the...
The eightieth is the...
The eighty-first is the...
The eighty-second is the...
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The eighty-fourth is the...
The eighty-fifth is the...
The eighty-sixth is the...
The eighty-seventh is the...
The eighty-eighth is the...
The eighty-ninth is the...
The ninetieth is the...
The ninety-first is the...
The ninety-second is the...
The ninety-third is the...
The ninety-fourth is the...
The ninety-fifth is the...
The ninety-sixth is the...
The ninety-seventh is the...
The ninety-eighth is the...
The ninety-ninth is the...
The hundredth is the...



the first with the left of the position of
reference give a slight swing and level with the
right foot in front of the left the feet being
parallel and facing the line.

As follows the swing and change the feet so
that the left foot comes to the front.

Repeat following feet the same as in
the first.

Repeat the whole of the foregoing with the feet
back to back.

Figure 2
1. The feet
2. The feet
3. The feet
4. The feet
5. The feet
6. The feet
7. The feet
8. The feet
9. The feet
10. The feet
11. The feet
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92. The feet
93. The feet
94. The feet
95. The feet
96. The feet
97. The feet
98. The feet
99. The feet
100. The feet



FIG. 73.



FIG. 74.

(d) On the fourth hop—put the right heel where the right toe was in (c), turning the right toe well up.

Repeat (a), (b), (c), (d), hopping with the right foot.

(c) (d) may be used as a "step march," when the class will move forward instead of remaining stationary.

6. Shuffle Step.

Hop on the left foot twice, giving at the same time two shuffle steps with the right foot on the floor in front of the left, the right toe being well turned out. (Children acquire the correct action more readily if told to imagine a coin on the floor which must be given two small kicking steps to send it in the direction in which the toe points when standing at "Attention.")

Repeat the hopping with the right foot, and the shuffle with the left.

Continue the step by changing the feet alternately.

GAMES.

The value of introducing games into a scheme of physical training has already been referred to, and by no means the least service a school can render is to implant in the children a love for healthy and wholesome play. The recreative effect of games is always of great importance, as through them so much can be done to make the lives of children brighter, more joyful, and less monotonous. The educational effect on the mind and character is equally valuable. Children can learn more easily perhaps in this way than in any other the value of co-operation with others, and the need to sacrifice when necessary personal desires and wishes for the common good; the faculty of initiation is at the same time developed, and the habit of obedience is encouraged. Even the little children can thus learn unselfishness and the control of their own feelings.

There is also the actual physical effect on the body as a whole, and in this connection it may be remembered that in playing games it is possible to procure a considerable amount of muscular exercise with comparatively little effort and fatigue, this being in a great measure because the exercise is spontaneous and thoroughly enjoyed.

It may be added that all games should be played in the open air whenever possible, and that for growing children games which employ both sides of the body equally are preferable to games in which the movements tend to be one-sided.

A few examples of typical games are described briefly below :—

Running Games.

1. *Fill the Gap* (or *Running the Circle*).—The children form a circle, holding hands. One player running round the outside of the circle touches another who at once starts running in the opposite direction, each child trying to get back to the vacant place first. The unsuccessful player continues the running, touching another child. To vary the game, the two running round the circle may be directed, when they meet, to bow or curtsey three times, to shake hands, or to turn completely round before going on, etc.

2. *Cat and Mouse* (or *Rat*).—The children join hands and stand in a circle, with the "Cat" outside and the "Mouse" inside. On the word "Go!" The Cat then tries to catch the Mouse, following him exactly, as he runs in and out of the ring passing between the other players under their clasped hands.

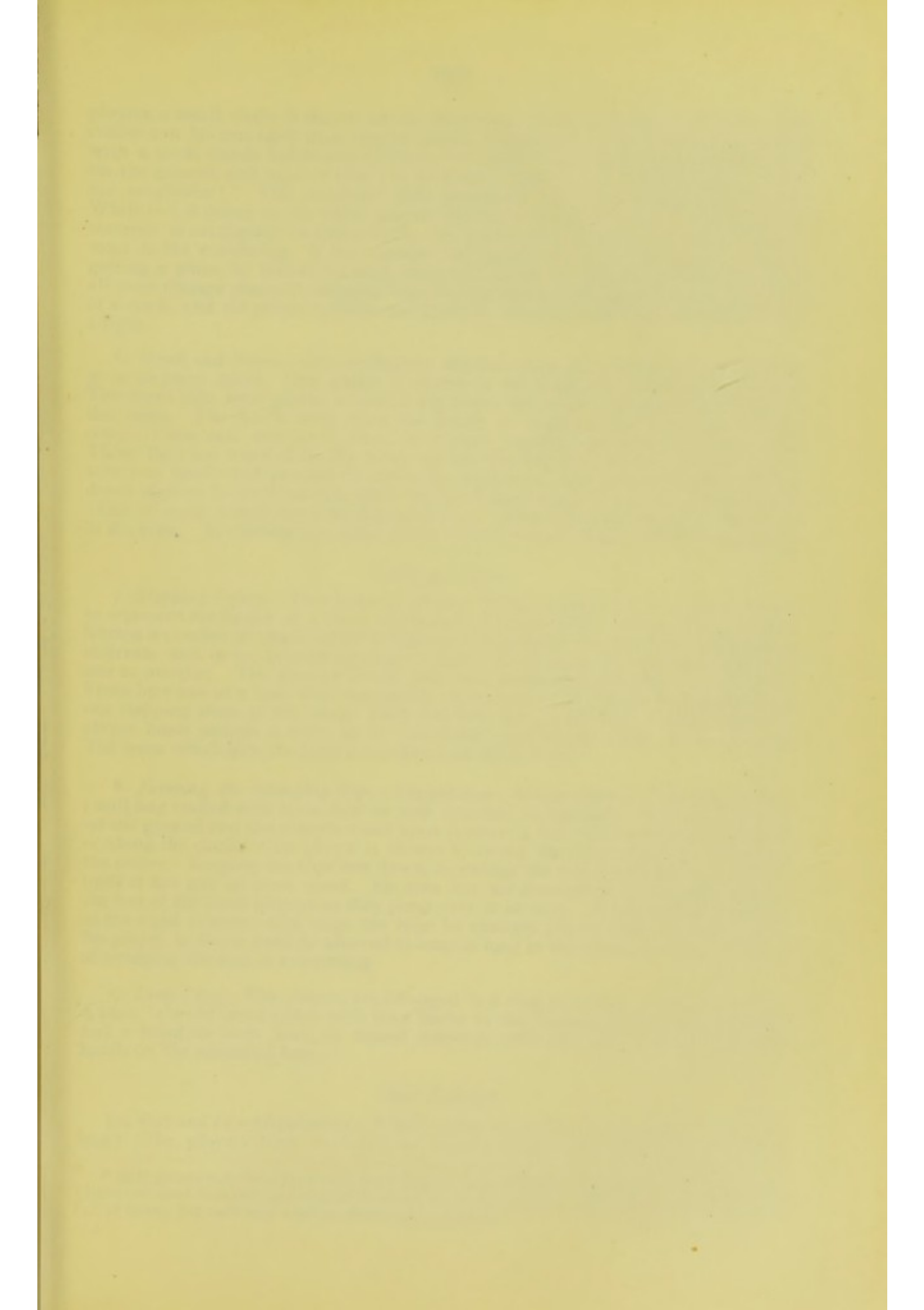
The players in the ring move round and allow the Mouse to pass freely in and out of the ring by raising their hands, while they try to prevent the Cat from following him by lowering their hands. As soon as the Mouse is touched, the last two players in the circle who let the Cat pass between them become Cat and Mouse.

Instead of standing in a circle the class may form in open ranks with hands joined, the Cat and Mouse standing at corners diagonally opposite. On the Command Left (or right)—*turn*, the children turn and again join hands, the direction of the parallel spaces between them being thus reversed. The Cat and Mouse must always run along these spaces, and may not pass under the joined hands of the other players. The positions may be altered as often as desired, and the game is thus made more difficult and interesting to older children.

3. *Twos and Threes*.—The children form a circle, arranged in pairs, one child standing behind the other and looking towards the centre, the couples being some six to eight feet apart. Two children are chosen, one to run, and the other to catch. The runner may stop in front of any pair, and then the child at the back must at once run on in his place and may try to save himself in the same way. If he is touched before he can do this he takes the place of the catcher, who runs in front of another pair. The players may also be formed in two circles, each pair of children facing one another with a space between them. Instead of running in front of the pair, the child who is being pursued runs between them, turns his back to whichever one he chooses, and it is then the turn of this latter child to run on in his place.

4. *Fox and Geese*.—One of the players is chosen as the "Fox." The others form a line one behind the other with their hands on each other's shoulders. The player at the head of the line is the "Goose-man," and has to protect the geese. The goose-man raises his arms sideways and the fox stands in front of him. At the word "Go!" the fox tries to run round behind the goose-man and touch one of the geese. The goose-man, followed by the geese, tries to prevent this by keeping the fox always in front of himself. When a goose is touched he becomes fox, the former fox becomes the goose-man, but takes his place at the other end of the line, every one turning round. If the line is broken it must be re-formed as quickly as possible, but the fox may catch anyone in the broken tail.

5. *Borrow a Light*.—(Apparatus: a broomstick.) One player is chosen to wander round, and find some one to "give him a light." For each of the other



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players a small circle is drawn on the floor with chalk, in which he stands. The circles can be arranged in a ring or placed irregularly. The wanderer, provided with a stick, stands before one of those "at home" in a circle, raps with his stick on the ground, and says: "Can you give me a light?" The other replies: "Ask my neighbour!" The wanderer then passes on and tries another, and so on. While this is going on, the other players stealthily change places. If the wanderer succeeds in occupying an empty circle, the player, who is now without a "home," must do the wandering. If the wanderer has gone round to all the players without getting a place, he throws his stick away and shouts: "The light is out!" Then all must change places at the same time, during which the wanderer takes possession of a circle, and the player without one picks up the stick and wanders round to get a light.

6. *Hawk and Doves*.—Two enclosures, the dovecotes, are marked out on the floor 30 or 40 paces apart. One player is chosen as the hawk, the others are the doves. The doves take their places in one of the cotes, the hawk stands midway between the cotes. The hawk now claps his hands to frighten the doves out of the cote. These run, one at a time, or several together, towards the other cote. Those that are touched by the hawk on the way become hawks. All the hawks now join hands and proceed to catch the remainder until all are caught. If the doves hesitate to leave the cote after the hawk has clapped his hands, he may call: "Out or in, or I shall come in and catch you!" after which he can catch the doves in the cote. In starting the game afresh the first player caught becomes the hawk.

Jumping Games.

7. *Stepping Stones*.—Two lines are drawn on the ground 20 to 30 paces apart to represent the banks of a river which lies between them. Across the river thus formed a number of small circles to represent stepping stones are drawn at irregular intervals and in an uneven zig-zag, so that a good jump is required to get from one to another. The players divide into two teams and assemble on one bank. From here one at a time they run *quickly* across to the other bank by jumping from one stepping stone to the next. Only one foot may touch each "stone," and if a player lands outside a circle he is "drowned," and stands aside in the stream. The team which gets the largest number over safely wins.

8. *Jumping the Swinging Rope*.—(Apparatus: A rope about 20 feet long with a small bag stuffed with horse-hair or tow attached to one end.) A circle is drawn on the ground and the players stand upon it about 4 feet apart and facing inwards or along the circle. One player is chosen to swing the rope, which he does from the centre. Keeping the rope low down, he swings the bag round inside the circle until it has got up some speed. He then lets out the rope so that it passes under the feet of the other players as they jump over it in turn. If anyone fails to jump at the right moment and stops the rope he changes places with the centre man. No player, however, must be allowed to remain long in the centre, because the work of swinging the rope is exhausting.

9. *Leap Frog*.—The players are arranged in a ring or a line. Those "showing a back" should stand either with their backs to the jumpers and their feet astride and a hand on each knee, or turned sideways with one foot forward and both hands on the advanced knee.

*Ball Games.**

10. *Out and In*.—(Apparatus: A ball about the size of a tennis ball or a bean bag.) The players form a ring, 5 to 8 paces from each other. The ball is

* Ball games may be played with bean bags instead of balls. The bags should be made of bright coloured material and should be about six inches square. They must not be filled too full of beans, but each may contain about half a pound.

thrown from player to player until someone drops it. The one who does this is "out" and leaves the ring. The next player picks up the ball and throws it on again. The object of the player "out" is now to run round the outside of the ring following the ball, and when someone else drops it, to try and pick it up himself. If he succeeds he gets "in" again and takes the place of the other player who is now "out."

11. *Chase Ball*.—(Apparatus: Two balls (or bean bags) about the size of tennis balls, preferably soft, one may be red and the other blue. This game can be played either in a ring or in two lines.)

(a) *Chase Ball in a Ring*.—The players are divided into two equal teams, the "reds" and the "blues," each with its leader. The whole form a ring of alternate "red" and "blue," with 4 to 6 paces between the players. The two leaders are at opposite sides of the ring and each holds a ball. At the word "Go!" each leader throws his ball to the next player of his own team on his right, who at once throws it on to the next, and so on, the balls chasing each other round the ring until one catches up and passes the other. If anyone drops the ball he must pick it up and return to his place before passing it on. The winning team is that which makes its ball pass the other. When the game is restarted the balls are thrown in the opposite direction. The game can also be played as follows:—When the ball has passed round the ring and come back to the leader he calls: "Blue one!" or "Red one!" as the case may be, the next time he calls: "Blue two!" and so on, up to 3 or 5 as agreed upon. The team which first reaches the agreed number wins.

(b) *Chase Ball in Two Lines*.—The players form two lines facing each other at 8 to 12 paces. Each line is composed of alternate "reds" and blues," the "reds" of one line standing opposite the "blues" of the other. There should be an interval of an arm's length between the players in each line. The balls are held by the two leaders at the end of the lines. At the word "Go!" they throw the balls across to the next player of their own team in the opposite line, and so on till the balls reach the other end of the lines, when they are returned in the same way to the leaders. As soon as a leader gets the ball back he calls "Blue one!" or "Red one!" and at once throws it as at the beginning. This is continued until the ball has returned to the leader a given number of times, to be agreed upon. The team which first reaches this number wins. In this and the preceding game, if the two balls hit together the players who threw them must pick them up, and return to their places before continuing to throw.

12. *Rolling Chase Ball*.—(Apparatus: Two big balls, footballs are good (or bean bags) may be used.) The players of each team form a line one behind the other. The two lines should be 8 to 10 paces apart. The leader at the head of each team holds a ball in both hands. At the word: "Go!" everyone stretches his arms above his head, and the leader of each line, holding the ball in his upstretched hands and keeping the body erect lets go of the ball, which is caught by the next player behind, who passes it backwards in the same way, and so on until the last player in the line receives it. The latter at once runs with the ball to the head of the line and continues the passing of the ball as before. The game continues in this way until one line has regained its original order, *i.e.*, with the leader in front, when that team wins. There must be no turning of the body in passing the ball, which must go straight backwards over the top of the head, and no one must look behind him. If anyone drops the ball he must run and pick it up and return to his place before passing it. Everyone must pass the ball, and if anyone fails to touch it as it passes over him, the ball must be passed back to him again. When the game is well played the ball appears to roll over the players heads, hence its name.



The first part of the paper is devoted to a general discussion of the problem of the origin of life. It is shown that the origin of life is a problem of the origin of the first self-replicating system. The author suggests that the first self-replicating system was a simple organic molecule which was able to reproduce itself. This molecule was formed by the action of natural forces on simple inorganic substances.

The second part of the paper is devoted to a detailed discussion of the origin of the first self-replicating system. It is shown that the first self-replicating system was a simple organic molecule which was able to reproduce itself. This molecule was formed by the action of natural forces on simple inorganic substances.

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The first thing I noticed when I stepped out of the car was the smell of fresh air. It was a relief after being stuck in traffic for hours. The sun was shining brightly, and the birds were chirping. I took a deep breath and felt a sense of peace. The world seemed so much better when I was finally free to move.

Continuing Down

As I drove down the road, I noticed the landscape changing. The fields were green and lush, and the trees were tall and leafy. The air was cool and refreshing. I felt a sense of joy and freedom as I drove through the countryside.

The road was winding and beautiful. I saw many small towns and villages with charming architecture. The people were friendly and welcoming. I felt like I was in a different world, one where life was slower and more peaceful.

As I continued down the road, I noticed the weather changing. It was getting warmer and sunnier. The clouds were disappearing, and the sky was a clear blue. I felt a sense of hope and optimism as I drove towards the horizon.

The road was still winding, but it was now straight and wide. I saw many large buildings and houses. The people were busy and working hard. I felt a sense of accomplishment and pride as I drove through the city.



13. *Tower Ball*.—(Apparatus: Three broomsticks tied together, and a football or other big ball.) Three sticks are tied together in the middle, and their ends spread out so that they will stand upright. These are placed in the centre of the hall or playground and form the tower. One of the players is chosen as the defender of the tower. The others are the attackers, and stand close together in a ring round the tower. The attackers try to knock the tower down with a football, which they kick along the ground. The defender kicks the ball back to the ring. If it passes out of the ring the player on whose right hand it passed must run after it, and place it in front of the next player on his right, who now has the right to kick it. When an attacker succeeds in knocking over the tower, he becomes the defender. If the defender accidentally knocks over the tower himself, he loses his place, which is taken by the attacker who last kicked the ball. The game can be varied by the attackers throwing the ball, and the defender hitting it away with a stick.

Miscellaneous Games.

14. *French Blind Man's Buff*.—The children form a circle and each is given a number. One child is blindfolded and stands in the centre of the circle. He then calls out any two numbers, and the children having these numbers must at once change places. While they are changing, the "blind man" endeavours to catch one of them; if he succeeds, he takes the place of the player he has caught, while the latter is blindfolded in his turn.

This game may also be played in the class-room with the children seated at their desks. The "blind man" stands in front of the class, and calls two numbers, the corresponding children at once stand up and answer "Here." The "blind man" then says: "Go!" and they change places, passing down the aisles as quietly as possible and crossing in front of the class in order to give the "blind man" a chance of catching one of them. Two pairs of children may simultaneously change places.

15. *Nine Pins*.—For this game music is required. One child stands in the centre of the room, on a marked spot. The other children take partners and march round him in a circle, leaving a space of two or three feet between each couple, until the music suddenly stops. Then each child in the inside of the circle at once tries to take the place of the child immediately in front, while the central player, who may not move until the music stops, also tries to secure one of the places left vacant during the change. The child who is left without a partner must stand in the centre when the music begins again. To vary the game, the children on the inside of the circle may be told to take the places of the children in front who are on the outside of the circle, the children on the outer side crossing over to the inner.

Among other Games may be mentioned "Contest" Games, such as Tug of War, which can be played in various ways; Races; Battledore and Shuttlecock, in which the right and left hand should be used alternately; Rounders, a useful playground game; and Basket Ball, which is of great value when the necessary apparatus can be provided. There are also a number of Singing Games, such as "London Bridge," which are suitable for little children.

APPENDIX B.

CLASS-ROOM EXERCISES.

Physical exercises may be taken in the class-room either as "recreative" exercises for a few minutes at a time between other lessons, or it may be necessary in some schools to take the regular lesson of physical training in the class-room. In the latter case it is desirable that the available space shall be utilised to its fullest extent, and it is often possible, by carefully arranging the children, to carry out a considerable number of exercises even in a somewhat crowded room. It will be understood that where Infants are taking their exercises in the class-room they will only do such movements as are suitable to their age.

Children should as far as possible stand clear of their desks, either between them or in any free space there may be at the front or back of the room. A quarter or a half turn to the right or left will often make an exercise, such as "Arm stretching sideways," or "Arm flinging," possible, which could not be taken if the whole class faced directly forward. Certain exercises, such as Head movements, Breathing exercises, some Arm movements, may *if necessary* be taken in the sitting position.

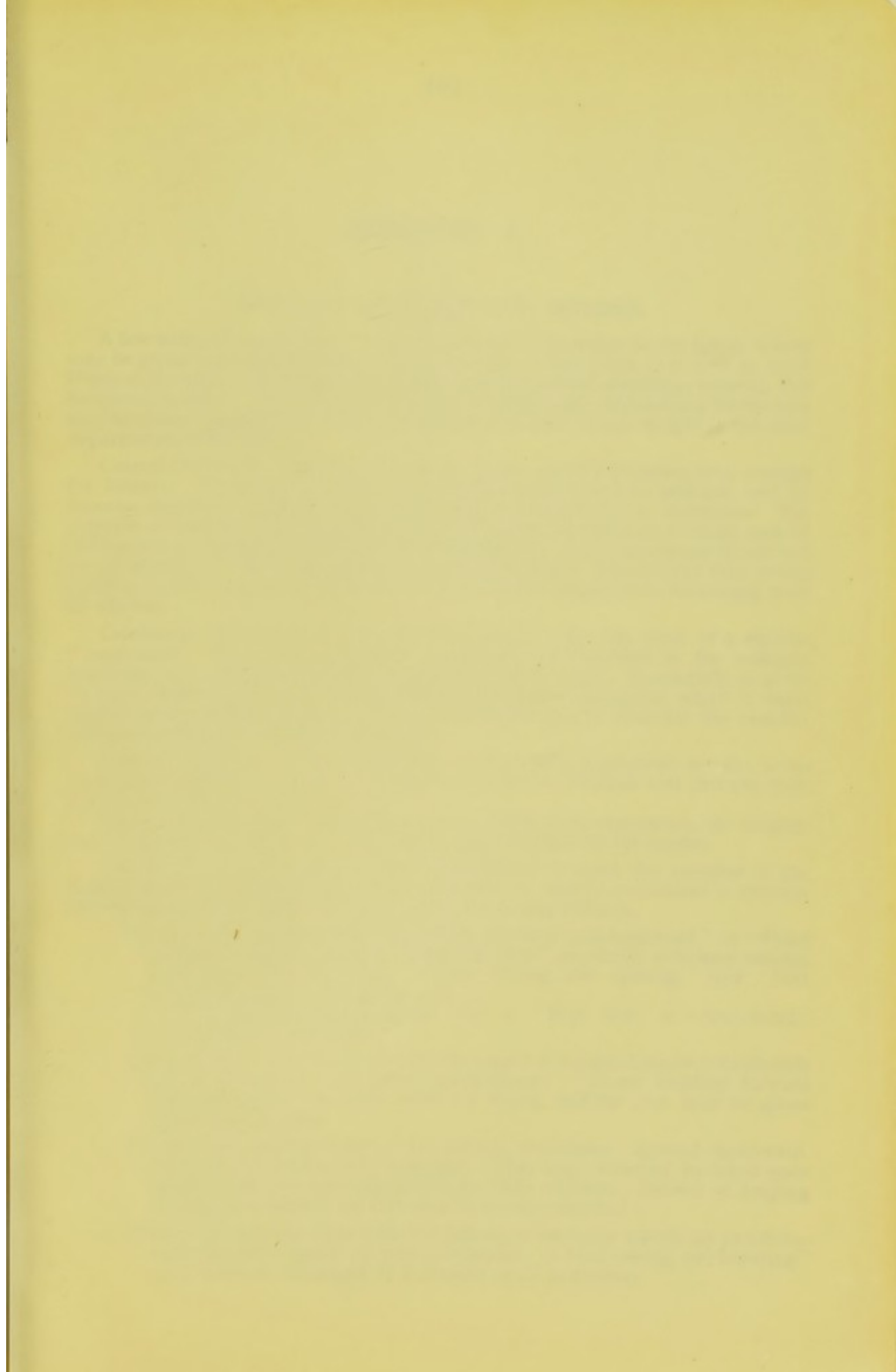
Children should not be allowed to stand *on* the seats or forms on account of the additional strain and fatigue entailed in balancing the body correctly. When the room is extremely small the class may be taken in two divisions.

The windows should always be open when Physical Exercises are being taught.

If it is necessary to take the lesson in the class-room, the tables of exercises should be followed as far as possible:—

- (1) *Introductory Exercises*.—The usual Order movements can seldom be given. Head movements and Breathing exercises can always be done. Some foot movements such as "Feet closing and opening," "Alternate toe or heel raising," and in many cases "Foot placings," are also possible.
- (2) *Trunk bending backward and forward* should not be omitted.
- (3) *Arm bendings and stretchings* can often be taken in every direction and in all cases in some directions. If the children are somewhat crowded together, alternate instead of double movements may be taught.
- (4) *Balance Exercises*, "Heel raising and Knee bending," "Heel raising," "Knee raising," and in many cases "Toe support placing" and "Leg raising" are usually found possible.
- (5) *Shoulder-blade Exercises* can be taken in nearly every case.
- (6) *Trunk turning and bending sideways* are always possible if the children have room to stand and may also be taken in a modified form from the sitting position.
- (7) *Marching*. Whether this is possible depends on the distance between the desks and on the amount of available free floor space. "Step" marches should seldom be attempted. Where necessary, marching may be replaced by "Marking time with knee raising" or "Running on the spot."

"Recreative" Exercises.—As these exercises are only taken for a few minutes at a time the arrangement of the class is not of great importance. Examples of such exercises are:—Breathing exercises, Head movements, Arm bendings and stretchings (taken quickly and vigorously), Trunk bending backward and forward, Arm swinging and flinging, and Running on the spot.



APPENDIX C.

PHYSICAL EXERCISES FOR INFANTS.

A few notes on the method of teaching Physical Exercises in the Infant School may be given appropriately here. Until the age of five years it is well to limit Physical Exercise to free play and games with occasional marching, running, and breathing exercises. From five to seven years of age some preliminary instruction may be given to prepare the child for the more formal lessons taught in the other departments of the school.

General Directions.—The lesson must be short, 15 minutes being long enough for Infants. It should be made as interesting and varied as possible, and no exercise should be repeated more than two or three times in succession. The exercises should be chosen for their general effects on nutrition as a whole, and for their power to stimulate respiration and circulation. Slow movements should not be attempted. At the same time, it must be constantly remembered that young children readily become fatigued, and therefore ample opportunity for resting must be allowed.

Commands.—Directions to Infants should never take the form of a definite "command." The exercise should be explained or described in the ordinary speaking voice, and the children may then be told to begin. Commands, as given to older children, tend to exact a certain precision of execution, which is never needed in the Infant school. The teacher should herself illustrate the exercise, and may perform it with the children.

Faults should not be too strictly corrected, as perfect positions are not to be expected or desired. Too much correction wearies the children and detracts from the recreative effect of the lesson.

No systematic attempt should be made to teach Order movements, the children may be placed in position or may be given their numbers by the teacher.

Though it is not necessary in the Infant School to teach the exercises in the definite order and sequence given in the Tables, it may be convenient to consider the suitability of the exercises in each group for young children.

1. *Introductory Exercises.*—"Head bending forward and backward," or "Head turning" may be taught. "Marking time," especially with knee raising, is a useful leg movement. "Feet closing and opening" and "Feet astride placing" may also be used.
Easy commencing positions, such as "Hips firm" or "Arms bend," may be taken as exercises.
2. *Trunk bending backward* should not be taught to Infants because considerable strain attaches to its correct performance. "Trunk bending forward and downward" is easily done by young children and may be given comparatively often.
3. *Arm bendings and stretchings.*—Any simple movements, upward, downward, sideways or forward, may be taught. They must, however, be taken more quickly, and less precisely than with older children. Instead of keeping the fingers extended, the fists may be loosely clenched.
4. *Balance exercises* are unsuitable for Infants as the brain centres are as yet too undeveloped to profit by such movements. "Heel raising and lowering" may, however, be taught as it is quite easily performed.

5. *Shoulder-blade exercises* are also unsuitable on the whole. The slow movements, such as "Arm parting," are not desirable, and if the swinging or flinging movements are taken bad positions of the body are apt to be assumed.

Abdominal exercises.—Though in a number of cases these movements, *e.g.*, "Prone falling," are more easily performed by Infants than by older children, it is seldom that the dress, at any rate of the girls, is suitable, and the children are likely, moreover, to get extremely dirty.

6. *Trunk turning or bending sideways* should on the whole not be taught to young children under seven years of age.

7. *Marching and running.*—These vigorous movements are perhaps more important in the Infant school than any others. The younger the child, the more irksome does continued sitting at a desk become, and the more necessary are exercises which bring into action all the muscles of the body. A proportionately large part of the lesson should therefore be spent in marching and the greater number of easy "step" marches taught, the greater the enjoyment of the class.

Marching is also of great value in teaching the child to walk and hold himself correctly. Music may be used to accompany marching, especially the various "step" marches.

"Astride jumping" and "Running on the spot" can be easily done even by young children.

8. *Breathing exercises* form an extremely necessary part of the lesson and may be given freely between the other exercises. Whenever possible, the lesson should be commenced with "handkerchief drill," to ensure a free passage for the air through the nose. Breathing may be taken with the "Hands on the chest," or in the "Hips firm," position and in this exercise little children may be directed to breathe audibly, keeping the mouth shut during expiration as well as inspiration.

Games for Infant Schools.

Physical exercises for Infants can often be taken in the form of Games, and a few of these games are suggested below :—

1. *Hammering.*—Feet sideways place. Then the hands are clenched one before the other (or clasped) above the head. "Hammering—begin! stop!" The arms and body are swung forward and downward quickly, then upward again.

2. *"Kneading Dough."*—Feet sideways place. Fists clenched, elbows bent and drawn well back. Body bent slightly forward. Then alternate arm stretching downward with strong twist of trunk from side to side. "Kneading—begin! stop!"

3. *"Sawing."*—Left foot forward, with the knee slightly bent and the left hand placed on it. This forms the sawing bench. The right hand, which is supposed to hold the saw, is carried far backward with elbow bent and trunk twisted well round. "Left foot forward with the knee a little bent! Left hand on the knee! Right hand ready to saw! Begin! Stop!" At "begin" the right arm is thrust forward and downward over the "sawing bench" and the body is twisted with it. Then right elbow is drawn back and body twisted back. Small children can make a hissing noise to represent the saw noise. Change feet and arms.



The first part of the paper is devoted to the study of the general properties of the function $f(x)$ which is defined by the equation $f(x) = \int_0^x f(t) dt$. It is shown that $f(x)$ is a constant function and that the only solution of the equation is $f(x) = 0$.

In the second part of the paper the author studies the properties of the function $f(x)$ which is defined by the equation $f(x) = \int_0^x f(t) dt + x$. It is shown that $f(x)$ is a linear function and that the only solution of the equation is $f(x) = x$.

The third part of the paper is devoted to the study of the function $f(x)$ which is defined by the equation $f(x) = \int_0^x f(t) dt + x^2$. It is shown that $f(x)$ is a quadratic function and that the only solution of the equation is $f(x) = x^2$.

In the fourth part of the paper the author studies the properties of the function $f(x)$ which is defined by the equation $f(x) = \int_0^x f(t) dt + x^3$. It is shown that $f(x)$ is a cubic function and that the only solution of the equation is $f(x) = x^3$.

The fifth part of the paper is devoted to the study of the function $f(x)$ which is defined by the equation $f(x) = \int_0^x f(t) dt + x^4$. It is shown that $f(x)$ is a quartic function and that the only solution of the equation is $f(x) = x^4$.

In the sixth part of the paper the author studies the properties of the function $f(x)$ which is defined by the equation $f(x) = \int_0^x f(t) dt + x^5$. It is shown that $f(x)$ is a quintic function and that the only solution of the equation is $f(x) = x^5$.

The seventh part of the paper is devoted to the study of the function $f(x)$ which is defined by the equation $f(x) = \int_0^x f(t) dt + x^6$. It is shown that $f(x)$ is a sextic function and that the only solution of the equation is $f(x) = x^6$.

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3. G. L. Lagrange, *Sur la résolution des équations différentielles du premier ordre*, Paris, 1782.

4. L. Euler, *Sur l'intégration des équations différentielles du premier ordre*, Berlin, 1769.

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4. *Marching with Hand Clapping or Stamping*.—This is used to get the correct rhythm in marching. Example: "with hand clapping (stamping) on every 3rd (5th) step, forward—march!" or, "with four ordinary steps, then four with hand clapping (stamping), forward—march!"

5. *Giants and Dwarfs*.—"Giants and dwarfs, forward—march!" Four steps on the toes with the arms stretched above the head, then four steps with knees bent and hands on the hips.

6. *Seven League Boots*.—Start from one side of the hall and go to the other with the least possible number of steps, each step a jump, the arms swinging alternately forward and backward, body inclined forward.

7. *Crow Hop*.—Heels raise and knees bend as far as they will go. Keep the back quite straight. Then hop forward with both feet together. At first only one hop at a time, later 2 or 3 hops in succession; finally several hops, but the children should stop before they become breathless. The children can also hop round each other in pairs, or round in a ring holding hands.

8. *Sending up a Sky-rocket*.—The children form a ring round the teacher and imitate what he does. The sparking, whirling, fizzing, shooting up of the rocket, and the bursting of the stars are imitated as follows:—*The Sparking* by clapping the hands lightly together and making a popping noise with the lips. First slowly and then faster and faster. *The Whirling and Fizzing*.—Place the right hand in front of the mouth, give it a rotary movement, and make a fizzing noise by blowing through the fingers. This gets quicker and louder until the rocket is ready to go up. When *the Rocket goes up*, stretch the right arm upwards and accompany the movement with a loud "sh" followed by a long drawn-out "hurrah!" *The Stars Burst*. Then every one raises the hands and snaps the finger and thumb of each hand alternately to represent the stars bursting. The different parts follow immediately on each other.

APPENDIX D.

A SUITABLE DRESS FOR GIRLS.

A simple dress for girls suitable for taking physical exercises or games (and as illustrated in the Syllabus) consists of a tunic, a jersey or blouse, and knickers. The tunic and knickers may be made of blue serge, and if a blouse is worn, it should be made of some washing material.

The tunic, which requires two widths of serge, may be gathered or, preferably, pleated into a small yoke with straps passing over the shoulders. The dress easily slips on over the head, and the shoulder straps are then fastened. It should be worn with a loose belt or girdle. In no case should any form of stiff corset be used. (See Fig. 75.)

The knickers, with their detachable washing lining, should replace all petticoats. They should not be too ample, and should not be visible below the tunic. They are warmer than petticoats and allow greater freedom of movement.

Any plain blouse may be worn with the tunic, or a woollen jersey may be substituted in cold weather. (See Fig. 76.)

With regard to the cost of such a dress, serge may be procured for 1s. 6d. to 2s. per yard. For the tunic some 2 to 2½ yards are usually required, and for the knickers about 1½ to 2 yards. It may be found possible in some schools to provide patterns, or to show girls how to make such articles for themselves. Such a dress, though primarily designed for physical exercises, is entirely suitable for ordinary school use. (See Fig. 77.)

Though it is, of course, not practicable to introduce this dress into all Public Elementary Schools, or in the case of all girls, yet in many schools there are children whose parents are both willing and able to provide them with appropriate clothing. The adoption of a dress of this kind, which is at the same time useful and becoming, tends to encourage that love of neatness and simplicity which every teacher should endeavour to cultivate among the girls. And as it allows free scope for all movements of the body and limbs, it cannot fail to promote healthy physical development.

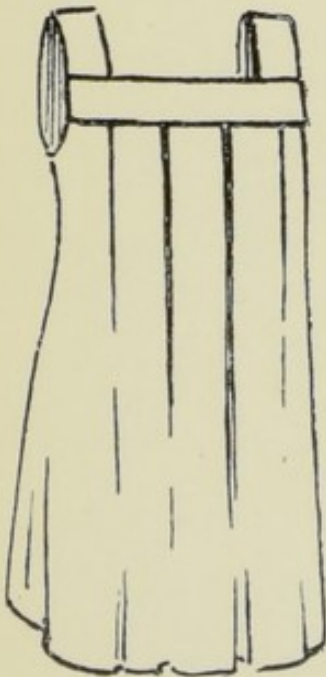


FIG. 75.



FIG. 77.

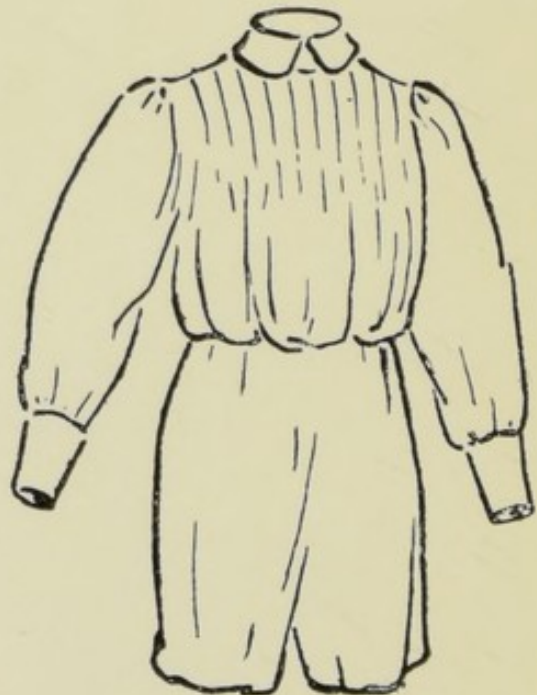


FIG. 76.

APPENDIX I

REGULATIONS FOR THE CONSTRUCTION OF BRIDGES AND STRUCTURES

The following regulations apply to the construction of bridges and structures over waterways and shall be observed by all persons engaged in such work. These regulations are intended to ensure the safety and stability of the structures and to protect the public interest.

1. All bridges and structures shall be designed and constructed in accordance with the provisions of the Engineering Act, 1917, and the Regulations made thereunder. The design and construction shall be subject to the approval of the appropriate authority.

2. The design and construction shall be subject to the approval of the appropriate authority. The design shall be submitted to the authority for approval before the construction is commenced. The authority may require the designer to submit such further information as may be necessary for the purpose of enabling the authority to satisfy itself that the design is in accordance with the provisions of the Act and the Regulations.

3. The construction shall be subject to the approval of the appropriate authority. The construction shall be carried out in accordance with the design approved by the authority. The authority may require the contractor to submit such further information as may be necessary for the purpose of enabling the authority to satisfy itself that the construction is in accordance with the provisions of the Act and the Regulations.

4. The construction shall be subject to the approval of the appropriate authority. The construction shall be carried out in accordance with the design approved by the authority. The authority may require the contractor to submit such further information as may be necessary for the purpose of enabling the authority to satisfy itself that the construction is in accordance with the provisions of the Act and the Regulations.

5. The construction shall be subject to the approval of the appropriate authority. The construction shall be carried out in accordance with the design approved by the authority. The authority may require the contractor to submit such further information as may be necessary for the purpose of enabling the authority to satisfy itself that the construction is in accordance with the provisions of the Act and the Regulations.

6. The construction shall be subject to the approval of the appropriate authority. The construction shall be carried out in accordance with the design approved by the authority. The authority may require the contractor to submit such further information as may be necessary for the purpose of enabling the authority to satisfy itself that the construction is in accordance with the provisions of the Act and the Regulations.

7. The construction shall be subject to the approval of the appropriate authority. The construction shall be carried out in accordance with the design approved by the authority. The authority may require the contractor to submit such further information as may be necessary for the purpose of enabling the authority to satisfy itself that the construction is in accordance with the provisions of the Act and the Regulations.

APPENDIX

DESIGNS FOR THE NEW COATS

The first design is a simple, straight, knee-length coat with a high collar and a single-breasted front. The second design is a similar coat but with a slightly flared skirt and a more pronounced collar. The third design is a more elaborate coat with a high, ruffled collar, a fitted bodice, and a full, gathered skirt. The fourth design is a long, flowing coat with a high collar and a simple, straight skirt. The fifth design is a short, puffed-sleeved coat with a high collar and a full skirt. The sixth design is a long, flowing coat with a high collar and a full skirt, similar to the third design but with a different collar style. The seventh design is a short, puffed-sleeved coat with a high collar and a full skirt, similar to the fifth design but with a different collar style. The eighth design is a long, flowing coat with a high collar and a full skirt, similar to the third design but with a different collar style. The ninth design is a short, puffed-sleeved coat with a high collar and a full skirt, similar to the fifth design but with a different collar style. The tenth design is a long, flowing coat with a high collar and a full skirt, similar to the third design but with a different collar style.



Fig. 1

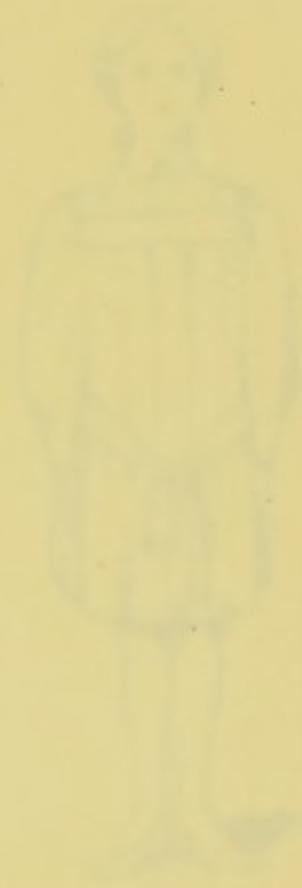


Fig. 2

APPENDIX E.

SUGGESTIONS ON THE CONSTRUCTION OF TABLES
OF EXERCISES.

A few additional suggestions on the Construction of Tables of Exercises are set out in this Appendix for the use of more experienced teachers, or of students who are themselves learning to make Tables of Exercises. They are not intended for teachers who have had no opportunities for special training in this work, because the teaching of ill-arranged or faulty Tables may do much to counteract the effect desired from the Physical Training lesson, and may even in some cases result in positive harm. Such teachers should therefore follow in detail the Tables given in the Syllabus.

Before beginning to construct a Table of Exercises reference should be made to the chapter on Order and Progression of Exercises (Chapter VI.) in which a skeleton Table showing the order and arrangement of the different groups of exercises will be found. At least one exercise from each group should be included in any complete Table. The individual groups of exercises are considered in some detail in Chapters III. and IV. Care must be taken to secure appropriate progression both in the exercises themselves, and in the starting positions, and to make the Table as varied and interesting as is consistent with suitable progression and the precise purpose for which the Table is constructed, including the age and physical requirements of the child. In selecting exercises due consideration must be given to Tables previously learned, in order that the new Table shall be, as a whole, somewhat in advance of the work already done.

For further convenience, a list of exercises contained in the different groups is appended, together with the starting positions of the feet and arms in approximate progressive order of difficulty. In some cases combinations of an exercise with other exercises or movements are also added. The numbers in brackets placed after the starting positions refer to a Table in which the exercise is taken from that position of the feet or arms. This list is not, of course, intended to be either comprehensive in the sense of covering all free standing Exercises, nor is it complete in itself. It is suggestive only.

<i>Exercises</i>	<i>Starting Positions of the Feet.</i>	<i>Starting Positions of the Arms</i>	<i>Combinations of the Exercise in this Group with other movements.*</i>
1. INTRODUCTORY EXERCISES.			
<i>(a) Head Exercises.</i>			
{ <i>Head bending :</i> Backward. Forward <i>Head turning,</i> <i>Head bending :</i> Sideways.	Standing (1). Feet close (14). Feet astride (24).	Hips firm (1). Attention (3). Arms bend (8). Arms sideways raise (49).	Arm turning outward and inward (31). Arm raising sideways (54).

* Reference to the Tables of Exercises in the Syllabus will indicate in what manner the additional movement is to be combined with the original exercise.

<i>Exercises.</i>	<i>Starting Positions of the Feet.</i>	<i>Starting Positions of the Arms.</i>	<i>Combinations of the Exercise in this Group with other movements.</i>
<i>(b) Exercises of the Feet and Legs.</i>			
<i>Feet closing and opening.</i> <i>Feet astride placing.</i> <i>Alternate toe (heel) raising.</i> <i>Foot placing:</i> Sideways. Outward. Forward. <i>Toe support placing</i> Outward. Forward. Sideways. <i>Lunging:</i> Outward. Forward. Sideways. Backward. Toe lunge backward.		Hips firm. Arms bend.	Feet astride placing with Arm stretching sideways, &c. (4), or Hips firm (11).

2. TRUNK BENDING BACKWARD AND FORWARD

<i>Trunk bending forward.</i> <i>Trunk bending backward.</i>	Feet astride (2). Standing (10). Feet close (16). Foot forward place (49).	Hips firm (2). Arms bend (5). Arms across bend (15). Neck rest (31). Arms sideways stretch (59). One hand Hip firm, one hand Neck rest (67). Arms upward stretch (70).	Arm stretching sideways (37). Head turning (40). Arm flinging (56). Arm stretching upward (62).
<i>Trunk bending forward and downward</i>	Feet astride (9). Standing (50). Foot forward place (71).	Arms upward stretch (9).	

3. ARM BENDING AND STRETCHING.

<i>Arm stretchings:</i> Sideways. Upward. Forward. Backward.	Standing.		Hand closing and opening (13). Marking time (38). A step forward and backward (41). A step to the right and left (43). Turning (47). About turning (65).
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4. BALANCE EXERCISES.

<i>Heel raising.</i>	Standing (1). Feet astride (3). Feet close (7). Foot outward place (17). Foot forward place (28).	Hips firm (1). Attention (5). Arms bend (9). Neck rest (11).	Alternate Hips firm and Neck rest (12). Head turning (13). Hand closing and opening from Arm sideways raise (16). Alternate Arms bend and Neck rest (22). Arm flinging (31). Arm raising sideways and upward (52).
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Name	Rank	Company	Regiment
John A. Smith	Private	Company B	1st Infantry
James B. Jones	Private	Company C	1st Infantry
Robert C. Brown	Private	Company D	1st Infantry
William D. White	Private	Company E	1st Infantry
Thomas E. Black	Private	Company F	1st Infantry
Charles F. Green	Private	Company G	1st Infantry
Richard H. King	Private	Company H	1st Infantry
Joseph I. Lee	Private	Company I	1st Infantry
Samuel J. Walker	Private	Company J	1st Infantry
George K. Hall	Private	Company K	1st Infantry
Edward L. Young	Private	Company L	1st Infantry
Frank M. Hill	Private	Company M	1st Infantry
John N. Adams	Private	Company N	1st Infantry

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<i>Exercises.</i>	<i>Starting Positions of the Feet.</i>	<i>Starting Positions of the Arms.</i>	<i>Combinations of the Exercise in this Group with other movements.</i>
<i>Heel raising and knee bending.</i>	Standing (2). Foot outward place (46). Foot forward place (49).	Hips firm (2). Arms bend (6). Neck rest (15). Arms across bend (20). Arms sideways stretch (60).	Alternate Hips firm and Arms bend (18). Arm stretching sideways (21). Arm stretching forward (23). Arm stretching upward (25). Head turning (28). Arm flinging (36). Arm parting (54). Arm raising sideways and upward (58).
<i>Heel raising and knee full bending.</i>	Standing (38). Foot forward place (63).	Hips firm (38). Arms bend (47).	Arm stretching sideways and upward (57). Arm stretching forward (66). Arm raising and lowering (71).
<i>Knee raising.</i>		Hips firm (35). Arms bend (42). Neck rest (48).	Foot bending and stretching (50). Arm raising sideways (63).
{ <i>Leg raising forward.</i> <i>Leg stretching forward.</i>	Knee raise (53).	Hips firm (40). Arms bend (45). Neck rest (56).	Arm raising forward (61).
{ <i>Leg raising backward.</i> <i>Leg stretching backward.</i>	Knee raise (62).	Hips firm (41). Arms bend (44). Neck rest (46).	Arm raising sideways (55).
<i>Leg raising sideways.</i>		Hips firm (49). Arms sideways raise (69).	Arm raising sideways (59). Arm raising upward (69).
<i>Heel raising and Alternate knee bending.</i>	Feet astride (52)	Hips firm (52). Neck rest (64).	

5 SHOULDER-BLADE EXERCISES *

<i>Arm raising :</i> Sideways. Forward. Sideways and upward. Forward and upward.	Standing Forward lunge (68).		
<i>Arm parting.</i>	Standing Toe lunge backward (72).	Arms forward raise (2). Arms forward and upward raise (25). Arms sideways and upward raise (29).	

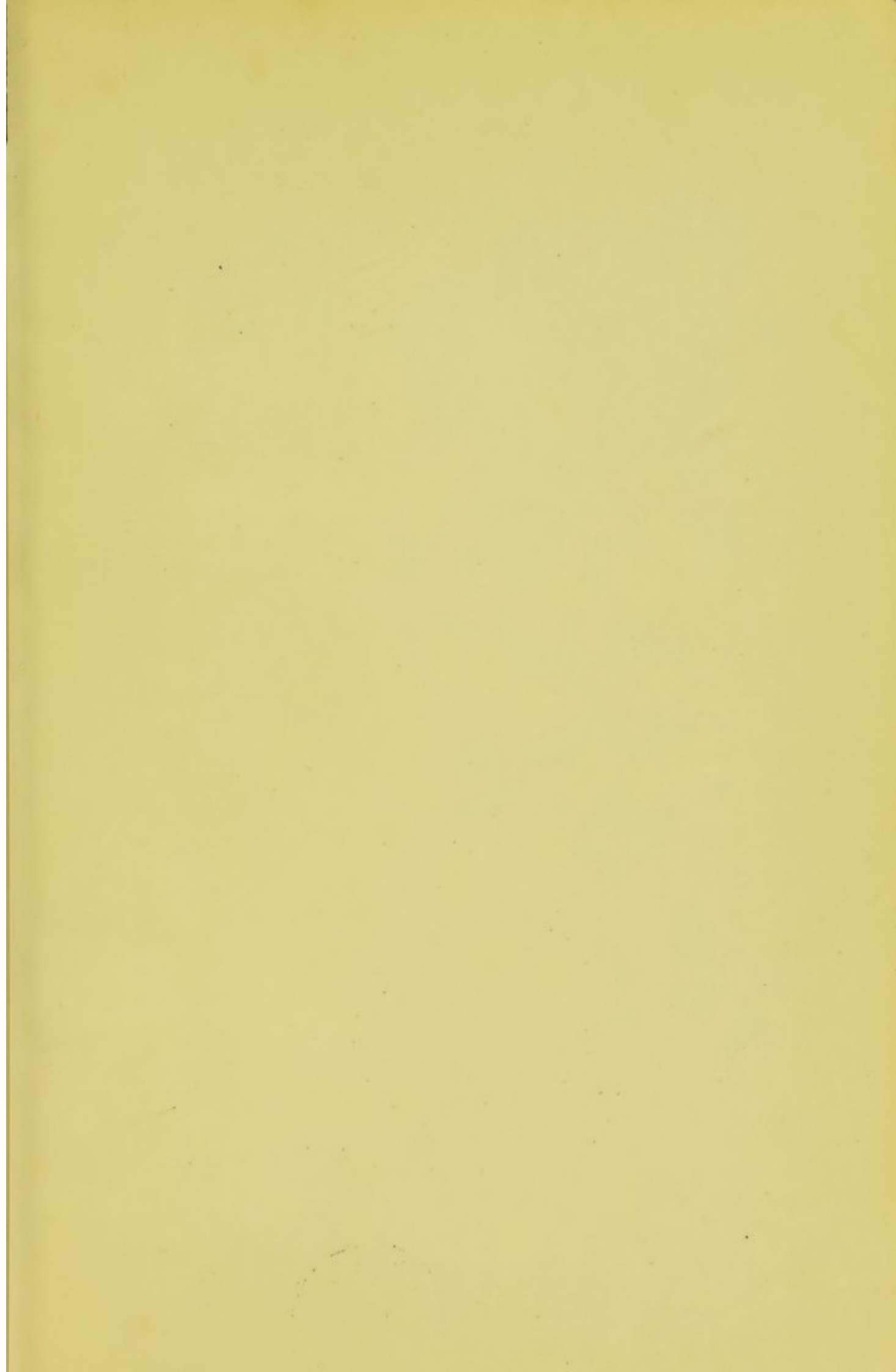
* "Trunk forward bend" is used as a starting position of the body for Shoulder-blade Exercises. Examples of this will be found in Tables 23, 55, 57, and 61.

<i>Exercises.</i>	<i>Starting Positions of the Feet.</i>	<i>Starting Positions of the Arms</i>	<i>Combinations of the Exercise in this Group with other movements</i>
<i>Arm flinging.</i>	Standing. Feet close (32).	Arms across bend (5)	Head turning (37). Foot placing outward (47). Lunging forward (51). Lunging backward (63) Lunging outward (70)
<i>Arm swinging :</i> Sideways. Forward and upward. Forward and sideways. Forward and downward. Downward and backward.	Standing. Forward lunge (65).	Arms forward raise (10). Arms forward and upward raise (14).	Foot placing forward (44). Foot placing outward (49). Lunging forward (53)

6 TRUNK TURNING AND BENDING SIDEWAYS

<i>Trunk turning.</i>	Standing (2). Feet close (6). Feet astride (9). Foot forward place (51).	Hips firm (2). Arms bend (8). Arms across bend (19). One hand Hip firm, one hand Neck rest (24). One hand Arm bend, one hand Neck rest (28). Neck rest (29). Arms upward stretch (61).	Arm flinging (38). Arm stretching sideways (43). Arm stretching forward (45). Arm stretching upward (48). Arm raising forward and upward (69).
<i>Trunk bending sideways.</i>	Feet astride (3). Standing (5). Feet close (13). Foot forward place (53).	Hips firm (3). Arms bend (7). One hand Hip firm, one hand Neck rest (17). Arms across bend (23). One hand Hip firm, one hand Arm bend (30). One Arm upward, one Arm downward, stretch (32). One hand Arm bend, one hand Neck rest (36). Neck rest (39). Arms sideways stretch (47). Arms upward stretch (62).	
<i>Trunk turning and bending sideways.</i>	Standing (50). Feet astride (54). Feet close (71).	Hips firm (50). Arms bend (52). One hand Hip firm, one hand Neck rest (58). Arms sideways stretch (63). Neck rest (68).	



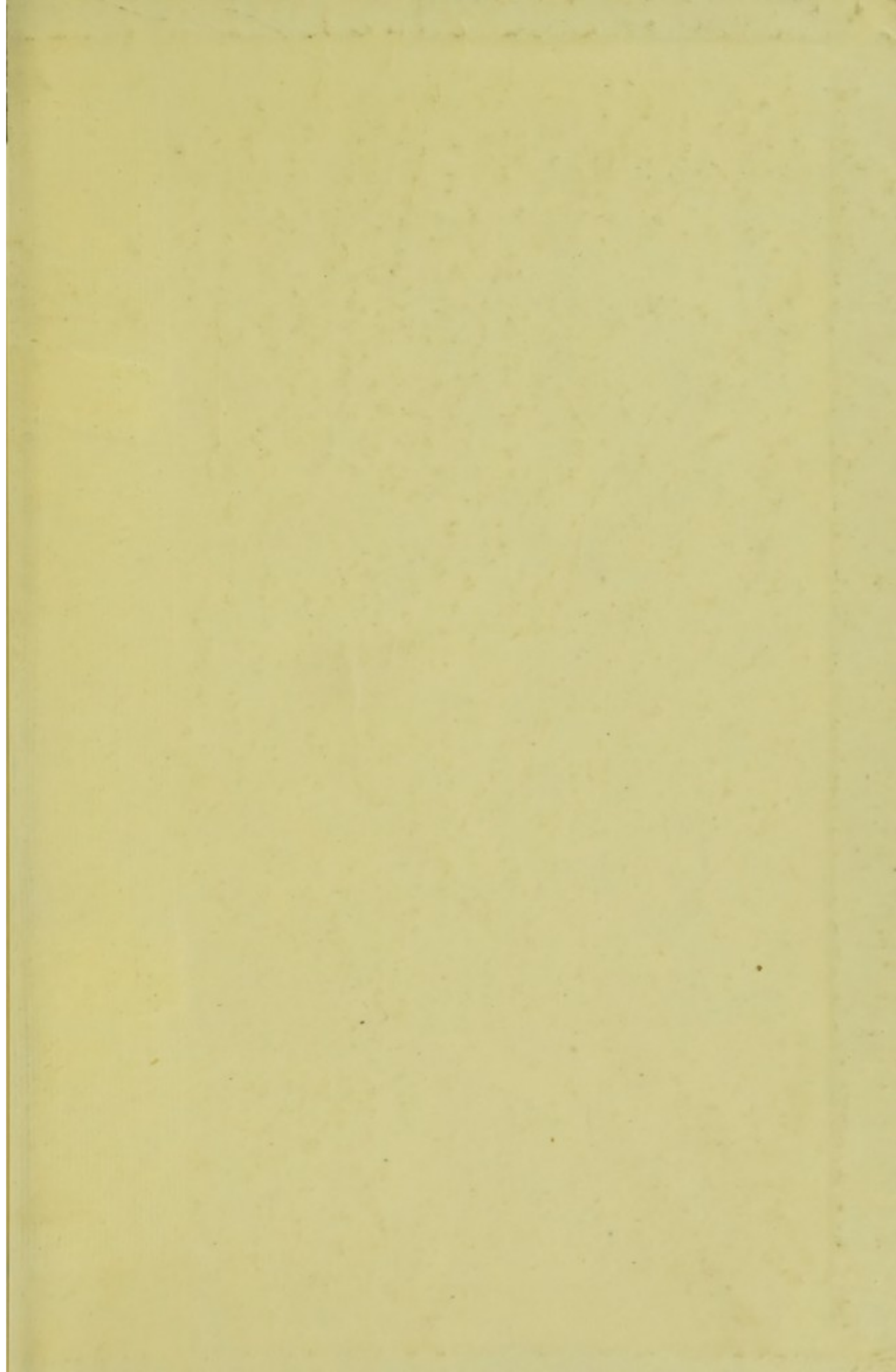


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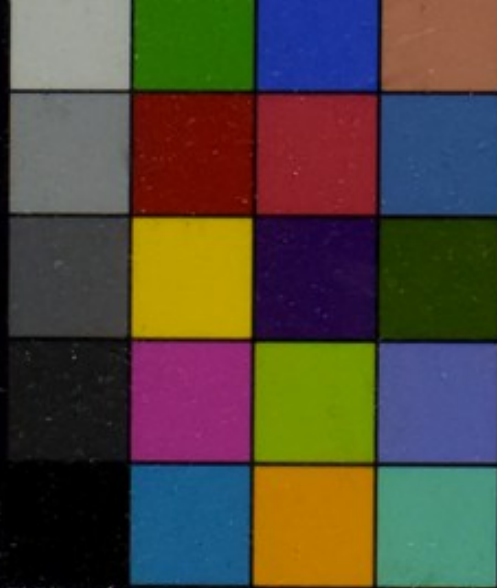












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