DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1919, No. 50
IN SEVEN PARTS

THE PUBLIC SCHOOL SYSTEM OF MEMPHIS, TENNESSEE

REPORT OF A SURVEY MADE UNDER THE DIRECTION OF THE COMMISSIONER OF EDUCATION

PART 7

HEALTH WORK

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, September 25, 1919.

SIR: I am transmitting herewith for publication as a bulletin of the Bureau of Education the report of a survey of the schools of the city of Memphis, Tenn., made under my direction. I am asking that it be printed in the following seven parts:

Part 1. Chapter I. An Industrial and Social Study of Memphis.
Chapter II. School Organization, Supervision, and Finance.
Chapter III. The Building Problem.
Part 2. Chapter I. The Elementary Schools.
Chapter II. The High Schools.
Part 3. Civic Education.
Part 4. Science.
Part 5. Music.
Part 6. Industrial Arts, Home Economics, and Gardening.
Part 7. Health Work.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR,

THE PUBLIC SCHOOL SYSTEM OF MEMPHIS, TENNESSEE.

INTRODUCTION.

In April, 1919, at the request of the Board of Education of Memphis, Tenn., the United States Commissioner of Education submitted the conditions on which the Bureau of Education would make a survey of the public school system of that city. These conditions, as stated by the Commissioner of Education, follow:

(1) That the board of education, the superintendent of public schools, and all other public officers and teachers connected with the schools will give me and the persons detailed to make the survey their hearty cooperation, to the end that the survey may be made most effectively and economically.

(2) That the survey committee be permitted to find the facts as they are, and, in so far as may seem advisable, to report them as they are found.

(3) That the findings of the survey committee and such recommendations for the improvement of the schools as may seem to be desirable may be published as a bulletin of the Bureau of Education at the expense of the Federal Government for distribution, first, among the citizens of Memphis and, second, among students of education throughout the country.

(4) That the necessary expenses of the survey, including expenses for travel and subsistence for employees of the bureau detailed for this work, and the honorariums and expenses of the one or more additional persons whom it may be necessary to employ to assist in the work will be paid by the board of education. It is understood, however, that the board will not be obligated for expenses beyond $5,000.

It is my purpose to begin the survey on or before May 12 and to have the field work of it finished in June. The final report will be submitted and printed as early as possible after the 1st of July. Such portion as may be needed by the board in determining their building policy for next year will be submitted as much earlier than the 1st of July as possible.

On May 5 the commissioner was notified that all the conditions named had been agreed to. To assist him in making this study the commissioner appointed the following commission:

THE SURVEY COMMISSION.

Frank F. Bunker, *Specialist in City School Systems, Bureau of Education, director of the survey.*

Thomas Alexander, *Professor of Elementary Education, Peabody College for Teachers, Nashville, Tenn.*

William T. Bawden, *Specialist in Vocational Education, Bureau of Education.*

Hiram Byrd, *Specialist in Health Education, United States Public Health Service.*

Elmer W. Christy, *Supervisor of Industrial Education, Public Schools, Cincinnati, Ohio.*

Fletcher B. Dresslar, *Specialist in School Architecture, Sanitation, Buildings, and Equipment, Bureau of Education.*

Arthur W. Dunn, *Specialist in Civic Education, Bureau of Education.*

Will Earhart, *Supervisor of Music, Public Schools, Pittsburgh, Pa.*

Alice Barrows Fernandez, *Specialist in Social and Industrial Problems, Bureau of Education.*

Florence C. Fox, *Specialist in Primary Grade Education, Bureau of Education.*

Ada Van Stone Harris, *Director of Elementary Practice Teaching, Public Schools, Pittsburgh, Pa.*

Carrie A. Lyford, *Specialist in Home Economics, Bureau of Education.*

F. A. Merrill, *Specialist in School and Home Gardening, Bureau of Education.*

John L. Randall, *Specialist in School and Home Gardening, Bureau of Education.*

Willard S. Small, *Specialist in School Hygiene and Physical Education, Bureau of Education.*

George R. Twiss, *Professor of Secondary Education and State High School Inspector, Ohio State University.*

The field work began May 12 and was completed June 7, except that two members of the staff remained two weeks longer.

While the time for the examination of conditions was short, the schools closing for the year on June 13, nevertheless, through careful organization of the work and through frequent meetings of the staff for the discussion of every phase of the problem, definite and positive conclusions in which all concurred were quickly reached. Although the commission as a whole considered every important activity of the work of the system, each member was assigned to the particular field of his interest. The reports of the members of the commission were organized by the director of the survey and transmitted to the Commissioner of Education for his approval. The report is issued in separate parts for general circulation.

THE PARTS TO BE ISSUED.

Part 1. Chapter I. An Industrial and Social Study of Memphis.
Chapter II. School Organization, Supervision, and Finance.
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Chapter II. The High Schools.
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Part 4. Science.
Part 5. Music.
Part 6. Industrial Arts, Home Economics and Gardening.
Part 7. Health Work.

This study of the Memphis schools is intended to be a study of policies and of practices; not of persons. The commission has con-

sciously avoided either praising or blaming, crediting or discrediting, individuals. The matter of placing an estimate upon the value of the services which individuals are rendering is the duty of local authorities; it falls outside the province of the survey commission and has not been attempted.

The commission desires to express its appreciation of the courtesy and consideration shown its members by citizens of Memphis, the members of the board of education, the secretary's office, the superintendent and his clerks, and the entire school corps. Without exception, all cooperated to make the investigation as thorough and as efficient as the time would permit.

A special word of appreciation is due the management of the Young Men's Christian Association for providing office rooms and equipment for the staff, without charge, and to the local company handling the Burrough's Adding Machine, which very kindly loaned one of these machines to the staff.

A summary of conclusions and recommendations will be found at the end of each chapter.

PART VII.—HEALTH WORK.

CONTENTS.—Educating for vigor and sanity—The obligation of the schools—Physical condition of school children—Mental status of children—What is being done—A plan proposed—The high schools—Summary of conclusions and recommendations.

EDUCATING FOR VIGOR AND SANITY.

The drama of preventive medicine has unfolded with almost bewildering rapidity during the past quarter of a century. Among its episodes are the conquest of such ancient and formidable enemies of man as yellow fever, malaria, typhoid fever. It has established permanent strategic principles for combating all communicable diseases. It has developed the principles of preventive tactics. Not unnaturally, the external factors in the conquest of health—sanitary engineering, public hygiene, and prophylactic measures—have bulked large both in scientific thinking and in popular imagination. This finds concrete illustration in the slogan of the public-health propagandists "Any community can buy health if it is willing to pay the price." The external conditions of health can be bought by a community, but the health of a community is the collective health of individuals, and each individual must achieve the personal strength, vigor, and disease-resisting power, which together constitute health, through the practice of personal hygiene. This basic fact has been somewhat obscured by our success with communicable diseases.

The World War cast a flaming shaft of light into this obscurity. We had conquered the most frightful of the epidemic diseases (until the "flu" came to mock us for a season); we had made it possible to assemble and quarter great armies in safety, but the men who should constitute those armies—what of them? One-third of them unfit for military duty on account of diseases, disabilities and defects, few of which bore any relation to communicable disease. They were rather the offspring of heredity and neglect. Not only that! When we had hurriedly jerked an army together and by rigorous culling had eliminated the glaringly unfit, we found that even of the selected men many were woefully lacking in strength, endurance, resilience, and resistance to disease, as well as in practical knowledge of everyday personal hygiene.

In the clear light of this revelation we realize that any community desiring the physical fitness of its citizens must include in its plans and specifications much more than the external factors of sanitary engineering, public hygiene, and medical prophylaxis; it must include measures for the nurture, the physical education, of its children. Stock breeders have long since learned this lesson. Witness the

beautiful horses, hogs, and cattle annually exhibited at the Tri-State Fair here in Memphis, the concrete results of applied animal husbandry, applied not by veterinarians (though veterinary science has had its part), but by those who have had committed to their care the feeding, housing, and training of the young animals.

It behooves us to take a leaf out of the book of animal husbandry for the benefit of *human husbandry*. Admit at once that the eugenics factor is eliminated from the analogy. Admit also that the nurture of a horse or a hog is a simple thing compared with the nurture of a human child. Admit, finally, that the child is committed to the care not of one "husbandman" but of many. The essential fact remains that the principles of human husbandry are infinitely less understood and infinitely less applied by those who care for children than are the principles of animal husbandry by those who care for animals. The public school is the agency for applying the principles and democratizing the knowledge of human husbandry.

I. THE OBLIGATION OF THE SCHOOLS.

"It is worse than a crime," said a diplomat, "it is a blunder." There is no more mischievous educational blunder than that of building educational procedure upon the traditional misconception of education as merely a matter of mental training—the acquisition of certain knowledge and skill. The introductory chapter of this report gives clear evidence that this blunder has not been repeated in this survey. Throughout this report the organic character of education is emphasized—its economic, social, and vital relations. "What kind of activities should be provided in the schools in order that the children of Memphis shall grow up to be healthy, intelligent, self-reliant, and worthy to carry on the traditions of the city" is a constantly recurring undertone. Human husbandry is implicit throughout.

A complete program for guarding and increasing abundance of life through the schools involves five fairly distinct factors: A wholesome physical environment, hygienic school management and methods of instruction, teaching of health, physical training activities, and health examination and direction.

WHOLESOME ENVIRONMENT.

By wholesome is meant not only "hygienic," but also ample and pleasant; grounds and buildings that shall contribute as much as inanimate surroundings can contribute to the growing of "healthy, intelligent, self-reliant" children. This is a basic condition of human husbandry. Growing plants and young animals can not grow successfully in unwholesome surroundings. It is not enough to say, even if it could be said truthfully, that the physical environment is such that no harm is done to the pupils; the obligation is discharged only when the physical environment of the schools is

such as to promote positively the growth and vigor of the children. The requirements relative to a wholesome physical environment are adequately covered in Chapters III, IV, and V.

But original construction is not enough. A perfectly wholesome school plant may be unwholesome if improperly operated. Proper operation means adequate supervision. This matter is partly covered in the sections just cited. Salutary improvements are recommended in the organization and administration of the janitor service, but there is no recommendation relative to supervision of the janitor service or for sanitary inspection of the school buildings.

The former of these two requirements would be met by a central head or supervisor of the janitor service, responsible for the efficient performance of the janitorial functions and the morale of the janitorial force. The second requirement would be met by periodic sanitary inspection of the school plants by competent inspectors. This work should be under the direction of a responsible head of coordinated school health work.

HYGIENIC SCHOOL MANAGEMENT.

This involves both physical and mental considerations upon which the morale of the school depends. The ideal is a school in which such essential physical conditions as ventilation and lighting are continuously respected; in which the daily schedule is so organized as to conserve the energies of pupils and teacher and to avoid undue fatigue and nervous strain; in which the disciplinary atmosphere is such as to produce good cheer, confidence, and industry. Recognition of this principle permeates the chapter on the elementary schools. The realization of such ideals in practice depends less upon special hygienic supervision than upon suffusing the entire school procedure with everyday knowledge of physical and mental hygiene. The recommendations in the section on Organization, Administration, and Supervision relative to the education, selection, compensation, and supervision of teachers, if carried out, will go far toward promoting hygienic management and methods of teaching.

THE TEACHING OF HEALTH.

Health, in the sense of a strong, enduring, disease-resisting, flexible, responsive body mechanism, is quite as much a matter of acquisition as is ability in playing the piano or ability to manage men. There are differences in native endowment, to be sure, but each individual must earn health by obeying the laws of health just as he must develop any other endowment. "Health, like happiness, is to a large extent a matter of habit, and therefore can be taught."[1] If, however, health is to be taught successfully, a law

[1] Teaching Health. Health Education No. 4. Bureau of Education, 1919.

simple principles must be religiously observed. The following summary of the most important of these principles is taken largely from the pamphlet quoted above.

1. The end to be aimed at is not *information*, but *action;* not simply *knowledge* of what things are desirable, but rather the *habitual practice* of the rules of healthy living.

2. Health teaching must be positive, not negative. We must learn to think of health in terms of strength and beauty and joy, rather than of weakness and disease. We must say "Brush your teeth regularly, so that you may enjoy the feeling of a fresh, clean mouth, and have a sweet breath, and a fine shining set of strong teeth!" not, "Don't forget to brush your teeth or they will decay and you will have a bad digestion."

3. Health must not be taught didactically, but by personal example and object lesson. Frequently it must be taught indirectly. The child has no interest in health for health's sake, but every girl desires to be beautiful and every boy desires to be strong and athletic. The wise teacher will build on these natural interests of the children, and inspire them to do the things which will result in physical beauty and strength. The health crusader program is an illustration of the principle.

4. Time must be allowed every school day from the kindergarten upward for health exercises and instruction. In the lower grades this time should be devoted wholly to the promotion of health habits. It is the *what* rather than the *why* which should be impressed on the younger children. With the older children the reasons for health rules take more prominence, and in the upper grades the habits which have been formed in the lower grades should be reinforced by accurate scientific knowledge. In the upper grades the pupils should be interested in public health movements, and much information of personal value can be thus indirectly conveyed. For instance, in studying the phases of the campaign against tuberculosis the pupil learns many facts about the disease and its prevention, with the advantage that his attention is directed outward and is not morbidly turned in upon himself. An essential part of this "instruction" is the daily morning inspection. This inspection may be a rapid review by the teacher, or it may take the form of a health club, in which the children are inspected by one of their own self-appointed health officers.

5. The pupils' progress in health should be recorded and reported as regularly as progress in arithmetic, reading, or any other school subject. The Classroom Weight Record, issued by the Bureau of Education, is a convenient means at once of recording progress in growth and enlisting the interest of pupils.

The State Normal School of Trenton, N. J., has devised a plan of crediting school and home work in hygiene. It has been used successfully in the schools of Westfield, N. J. It might be adapted to almost any local situation.

Class work 50
I. Personal appearance 10
1. Neatness of dress. (*a*) Buttons on. (*b*) Clothes brushed. (*c*) Shoes shined.
2. Hair neatly arranged.
II. Personal habits—Hygienic 10
1. Cleanliness. (*a*) Face. (*b*) Hands. (*c*) Nails. (*d*) Teeth.
2. Exercises at home.
3. Sleeping with window open.
III. School housekeeping 10
1. Neatness of desk (inside, outside).
2. Neatness of floor near desk.
3. Neatness of cloakroom.
4. Appearance of book covers.
IV. Manners 10
1. Attitude toward teacher.
2. Attitude toward classmates.
3. Attitude in the home.
V. Posture 10
1. Standing.
2. Sitting.
3. Marching.

6. Finally, the health teaching must be integrated with the physical training activities. The physical efficiency standards recommended in the section on physical training activities offers an ideal means of bringing home to each child of the middle and upper grades the personal value of observing the simple health requirements. The desire to be up to the standard or to excel the standard is a sure stimulus to effort.

It would not be wise to attempt to outline a "course in health instruction" for the Memphis schools. That would likely result either in wooden conformity or indifferent observance. What is recommended is that the principles as sketched above be studied, digested, and applied. The thing to be desired is interested interest-compelling, and constructive effort on the part of teachers and supervisors. The Health Education series of the Bureau of Education in the hands of all the teachers should furnish a sound basis for development of this vital part of the education program.

Physical training activities.—Physical education broadly and rightly conceived is a general term. Included in its meaning are all the factors that condition and contribute to the development of "bodily vigor and endurance, muscular strength and skill, bodily and mental poise, and the social and moral qualities of courage, self-control, self-subordination, cooperation under leadership and dis-

ciplined initiative." Muscular activity is the active principle of physical education. Physical training therefore is the active factor in physical education. A repertory of physical training activities adapted, with due consideration of age and strength, to securing the ends enumerated above is fundamental in a program of human husbandry.

The elementary school program.—The "Manual of Physical Exercises and Games for Public Schools of Memphis—First to Eighth Grade," outlines the program of physical training activities for the Memphis elementary schools. The program consists of calisthenics and games for the primary grades; calisthenics, wand and dumb-bell exercises, and games for the upper grades. Footwork and marching exercises are included throughout. Ten minutes a day is the prescribed time for this part of the program. In some of the schools where teachers specially interested in this work have been assigned to conduct it, from 20 to 30 minutes a day are given.

That the author of the manual, the present supervisor of physical education, is appreciative of relative values is shown by such statements as the following found in the text, "Exercising out of doors is of greater benefit to the pupils than exercising in doors; therefore, move game class out doors for exercising as often as the weather permits." "Impress upon the pupils, especially girls, the importance of wearing loose garments." "Games are the most suitable and beneficial (forms of exercise) for the lower grades." There is, however, a somewhat disproportionate emphasis, in the explanation and directions, upon the disciplinary objects of physical training at the expenses of the æsthetic objects. The calisthenic exercises are explained in detail and with precision; there is little or no explanation of the games. The repertory of games is good.

There is no reference in the manual to modern school playground activities or to the socialized athletics so conspicuous in the present day progressive programs of physical training activities. These omissions may doubtless be attributed in part to the fact that the manual was issued in 1909; and in part to the lack, at that time, of official hospitality to such innovations in educational practice. The keen interest of the supervisor in such movements and his just appreciation of their community importance are attested by a brief statement furnished by him in regard to the history of the playground movement and the "safe and sane Fourth of July."

THE COMMUNITY PLAYGROUNDS.

About 15 years ago, after giving numerous public exhibitions and demonstrations with my classes in physical training, a few altruistic citizens organized the local "Play Ground Association." After the usual trials and tribulations that public-spirited and benefiting organizations are subject to, our park board generously donated $300 and sufficient space in the parks for playground purposes. The money was invested in purchasing apparatuses, which were

equally divided among the three parks. The success of these cases of recreation and play for children was so pronounced that the park board offered all of Market Square for this purpose. After being equipped with the necessary apparatus purchased by funds donated by a few members of the Playground Association, and being located in one of the most densely populated districts of the city, this place proved to be a real blessing. Our next increase of playgrounds was through the generosity of Mr. Rosier, of the Memphis Steam Laundry. He equipped a large lot on Washington Avenue and Fourth Street with all the necessary paraphernalia and donated it to the city. Owing to the lack of proper supervision and care, this place had to be abandoned, the apparatus being moved to Forest Park, which is now our fifth playground. In recent years a recreation commission has been created with sufficient funds from the city to enable them to employ a supervisor and a number of teachers. Though the results have been good and satisfactory, yet there are many hundreds of children in real need of recreation and hygiene who would be benefited by the establishment of a few playgrounds in the more denseuy populated parts of the city.

SAFE AND SANE FOURTH OF JULY.

Some 11 years ago, my attention was called to a movement, originating, I believe, in the Eastern States, which was to wean our youth and many adults from the vicious and dangerous manner of celebrating the "Birth Day of Liberty" to a more sane, safe, and joyous one. Realizing the great and incalculable educational value of this beautiful movement, a number of public-spirited citizens organized our local "Safe and Sane Fourth of July Association" with the purpose of celebrating our "Liberty Day" in a more appropriate way. From year to year the new method proved more and more attractive to young and old. The program, consisting of suitable gymnastic and atheletic games for both sexes, was given annually, though changed each year. Thousands of children participated, their joy and happiness being an adequate compensation for the strenuous work of the organization.

Health examination and direction.—This factor in the program is discussed in extenso in Sections II–V, inclusive.

II. PHYSICAL CONDITION OF MEMPHIS SCHOOL CHILDREN.

There are no records of the physical condition of the children in the Memphis schools. In the time at the disposal of the survey no extensive examination could be made. It was decided therefore to secure approximate data by two methods: (1) By the examination of a limited number of children in representative schools; (2) by getting estimates from teachers as to the numbers of certain classes of defective children.

Examination of 600 children.—It is recognized that the examination of only 600 children out of a school population of 22,000 is merely a sampling process. It is believed, however, that by reason of the representative character of the schools selected, the results of these examinations will serve as a fairly reliable index of general conditions. In each of two white schools and in one colored school 200 children were examined, and comparisons made upon the basis of height, weight, eyes, teeth, and progress in school. In selecting the white schools Riverside was taken as representing a large laboring element; and Snowden as representing a somewhat more exclu-

sive white population. Grant was taken as a typical colored school. The examinations were limited to the age groups 10 to 14 years, inclusive, nearest birthday. An equal number of boys and girls, unselected except as to age, gave 20 of each sex at each age in each school.

Height and weight.—Table 1 gives the average heights and weights of these 600 according to race, sex, and age. No significant differences are shown in the average height and weight of the two races at the different age periods.

TABLE 1.—*Average height and weight of boys and girls, 10 to 14 years of age, inclusive—400 white and 200 colored children.*

Age in years.	White.				Colored.			
	Boys.		Girls.		Boys.		Girls.	
	Height, in inches.	Weight, in pounds.	Height, in inches.	Weight, in pounds.	Height, in inches.	Weight, in pounds.	Height, in inches.	Weight, in pounds.
10	52.8	60.9	53.3	66.3	51.4	62.7	53.4	68.0
11	54.8	69.8	54.4	72.1	54.4	72.9	55.7	74.8
12	56.9	77.9	57.2	83.8	55.4	77.5	57.4	77.9
13	58.7	88.9	60.0	95.0	57.3	81.1	58.7	87.0
14	59.8	94.8	60.8	96.4	58.2	88.5	60.4	99.0

Table 2 shows the average height and weight of the Memphis children, based upon these 600 examinations, compared with the norm compiled by the Children's Bureau. The Memphis group of boys at 10 years are slightly under the norm in weight, and at 14 are slightly under the norm in both weight and height; but at all other points they are above the norm. The girls are above the norm for both height and weight at all ages.

TABLE 2.—*Height and weight of 600 children of Memphis, compared with Children's Bureau norm.*

Boys.		Norm.		Girls.		Norm.	
Height in inches.	Weight in pounds.	Height in inches.	Weight in pounds.	Height in inches.	Weight in pounds.	Height in inches.	Weight in pounds.
52.1	64.8	51.7	65.3	53.3	67.1	51.2	62.3
54.6	71.4	53.2	79.2	55.1	73.4	53.5	68.8
55.1	77.7	55.0	76.8	57.3	80.8	56.0	78.3
58.0	88.0	57.2	84.8	59.3	91.0	58.2	88.7
59.0	91.6	60.0	94.8	60.6	97.7	60.0	94.6

But the average height and weight of these children is not the most significant thing. Much more important is the relation of weight to nutritional contrition. It is now generally recognized that there is an average weight for a given age and height, and that when a child falls very far below this average, undernourishment is indicated. The table of comparative heights and weights issued by the Bureau of Education for the various age groups, and quoted below, was used in making these studies.

TABLE 3.—*Height and weight.*

BOYS.

Height, inches.	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs.	15 yrs.	16 yrs.	17 yrs.	18 yrs.
39	35	36	37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
40	37	38	39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
41	39	40	41	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
42	41	42	43	44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
43	43	44	45	46	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
44	45	46	46	47	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
45	47	47	48	48	49	.....	.....	.....	.....	.....	.....	.....	.....	.....
46	48	49	50	50	51	.....	.....	.....	.....	.....	.....	.....	.....	.....
47	.....	51	52	52	53	54	.....	.....	.....	.....	.....	.....	.....	.....
48	.....	53	54	55	55	56	57	.....	.....	.....	.....	.....	.....	.....
49	.....	55	56	57	58	58	59	.....	.....	.....	.....	.....	.....	.....
50	.....	.....	58	59	60	60	61	62	.....	.....	.....	.....	.....	.....
51	.....	.....	60	61	62	63	64	65	.....	.....	.....	.....	.....	.....
52	.....	.....	62	63	64	65	67	68	.....	.....	.....	.....	.....	.....
53	.....	.....	.....	66	67	68	69	70	71	.....	.....	.....	.....	.....
54	.....	.....	.....	69	70	71	72	73	74	.....	.....	.....	.....	.....
55	.....	.....	.....	.....	73	74	75	76	77	78	.....	.....	.....	.....
56	.....	.....	.....	.....	77	78	79	80	81	82	.....	.....	.....	.....
57	.....	.....	.....	.....	.....	81	82	83	84	85	86	.....	.....	.....
58	.....	.....	.....	.....	.....	84	85	86	87	88	90	91	.....	.....
59	.....	.....	.....	.....	.....	87	88	89	90	92	94	96	97	.....
60	.....	.....	.....	.....	.....	91	92	93	94	97	99	101	102	.....
61	.....	.....	.....	.....	.....	.....	95	97	99	102	104	106	108	110
62	.....	.....	.....	.....	.....	.....	100	102	104	106	109	111	113	116
63	.....	.....	.....	.....	.....	.....	105	107	109	111	114	115	117	119
64	.....	.....	.....	.....	.....	.....	.....	113	115	117	118	119	120	122
65	.....	.....	.....	.....	.....	.....	.....	.....	120	122	123	124	125	126
66	.....	.....	.....	.....	.....	.....	.....	.....	125	126	127	128	129	130
67	.....	.....	.....	.....	.....	.....	.....	.....	130	131	132	133	134	135
68	.....	.....	.....	.....	.....	.....	.....	.....	134	135	136	137	138	139
69	.....	.....	.....	.....	.....	.....	.....	.....	138	139	140	141	142	143
70	.....	.....	.....	.....	.....	.....	.....	.....	.....	142	144	145	146	147
71	.....	.....	.....	.....	.....	.....	.....	.....	.....	147	149	150	151	152
72	.....	.....	.....	.....	.....	.....	.....	.....	.....	152	154	155	156	157
73	.....	.....	.....	.....	.....	.....	.....	.....	.....	157	159	160	161	162
74	.....	.....	.....	.....	.....	.....	.....	.....	.....	162	164	165	166	167
75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	169	170	171	172
76	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	174	175	176	177

GIRLS.

Height, inches.	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs.	15 yrs.	16 yrs.	17 yrs.	18 yrs.
39	34	35	36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
40	36	37	38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
41	38	39	40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
42	40	41	42	43	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
43	42	42	43	44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
44	44	45	45	46	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
45	46	47	47	48	49	.....	.....	.....	.....	.....	.....	.....	.....	.....
46	48	48	49	50	51	.....	.....	.....	.....	.....	.....	.....	.....	.....
47	.....	49	50	51	52	53	.....	.....	.....	.....	.....	.....	.....	.....
48	.....	51	52	53	54	55	56	.....	.....	.....	.....	.....	.....	.....
49	.....	53	54	55	56	57	58	.....	.....	.....	.....	.....	.....	.....
50	.....	.....	56	57	58	59	60	61	.....	.....	.....	.....	.....	.....
51	.....	.....	59	60	61	62	63	64	.....	.....	.....	.....	.....	.....
52	.....	.....	62	63	64	65	66	67	.....	.....	.....	.....	.....	.....
53	.....	.....	.....	66	67	68	68	69	70	.....	.....	.....	.....	.....
54	.....	.....	.....	68	69	70	71	72	73	.....	.....	.....	.....	.....
55	.....	.....	.....	.....	72	73	74	75	76	77	.....	.....	.....	.....
56	.....	.....	.....	.....	76	77	78	79	80	81	.....	.....	.....	.....
57	.....	.....	.....	.....	.....	81	82	83	84	85	86	.....	.....	.....
58	.....	.....	.....	.....	.....	85	86	87	88	89	90	91	.....	.....
59	.....	.....	.....	.....	.....	89	90	91	93	94	95	96	98	.....
60	.....	.....	.....	.....	.....	.....	94	95	97	99	100	102	104	106
61	.....	.....	.....	.....	.....	.....	99	101	102	104	106	108	109	111
62	.....	.....	.....	.....	.....	.....	104	106	107	109	111	113	114	115
63	.....	.....	.....	.....	.....	.....	109	111	112	113	115	117	118	119
64	.....	.....	.....	.....	.....	.....	.....	115	117	118	119	120	121	122
65	.....	.....	.....	.....	.....	.....	.....	117	119	120	122	123	124	125
66	.....	.....	.....	.....	.....	.....	.....	119	121	122	124	126	127	128
67	.....	.....	.....	.....	.....	.....	.....	.....	124	126	127	128	129	130
68	.....	.....	.....	.....	.....	.....	.....	.....	126	128	130	132	133	134
69	.....	.....	.....	.....	.....	.....	.....	.....	129	131	133	135	136	137
70	.....	.....	.....	.....	.....	.....	.....	.....	.....	134	136	138	139	140
71	.....	.....	.....	.....	.....	.....	.....	.....	.....	138	140	142	143	144
72	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	145	147	148	149

Prepared by Dr. Thomas D. Wood.

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These tables are based upon examination of white children only. The deviations shown by the 200 colored children make their value doubtful for use with colored children. It is probable that, in the case of colored children, tables will have to be worked out based upon this race alone.

Comparison of the results of measurements of the 400 children in the two white schools with the above table gives the following percentages of children 10 per cent or more underweight:

Riverside (large laboring population)	31	per cent
Snowden (exclusive white population)	18	per cent
Average for whites	24.5	per cent

It is significant that the less fortunate economic group shows 13 per cent more underweight than the more fortunate group. This corresponds with the findings in investigations elsewhere of the growth of children.[1]

A child who is 10 per cent below the average for his age and height is probably undernourished. Dr. W. R. P. Emerson, of Boston, whose extensive experience with this problem gives his opinion special authority, says that "the child who is chronically 7 per cent underweight for his height is not only undernourished but malnourished."[2] Ten per cent, therefore, may be taken as a conservative danger signal. All such children require further examination and consideration.

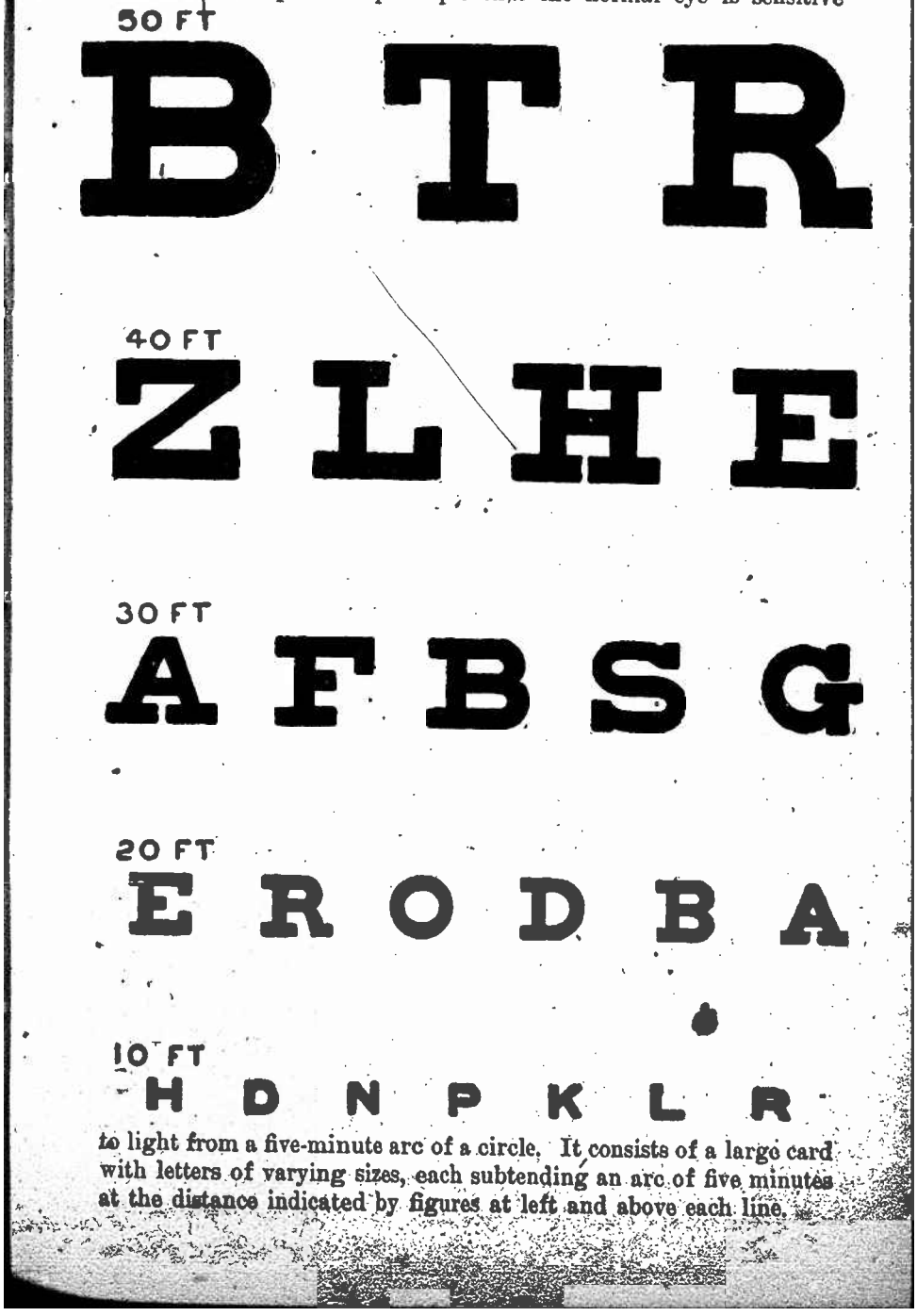
Though there is doubt of the applicability to colored children of the tables used above, there is no reason to doubt that there is as much underrutrition among the colored as among the white children. Indeed, the lower economic status would indicate a probability of more. Assuming, however, an equal degree among the two races, and assuming that the three schools are fair samples of the school population, then there are in it *approximatey 3,700 white and 1,800 colored undernourished children.*

Nutrition is the most fundamental factor in the general development and well-being of children. Moreover, it is believed that attention to nutrition is vitally important in the prevention of communicable diseases. Certain it is that the most vital part of the treatment of tuberculosis is the diet; it is hard to escape the conviction, therefore, that if diet is important in the matter of cure, it is even more important in the matter of prevention.

[1] In a study of London elementary schools, some years since, Dr. Kerr found ill-nourished children as follows: In good-class schools, 12 per cent; in medium schools, 14 per cent; and in poor schools, 47 per cent.

[2] Emerson, A Nutrition Clinic in a Public School, *American Journal Diseases of Children*, 17: 251–63, April, 1919.

Eyes.—The Snellen Test was used in examining the eyes. This test is based upon the principle that the normal eye is sensitive



to light from a five-minute arc of a circle. It consists of a large card with letters of varying sizes, each subtending an arc of five minutes at the distance indicated by figures at left and above each line.

In practice the card is placed upon the wall where it is well illuminated, and the child placed at a distance of 20 feet. One eye is tested at a time, the other being covered but not closed. If the child can read all the letters to be read 20 feet, his visual acuity is normal, and is marked 20/20. If he can not read these, but can read those to be read at 30 feet, his visual acuity is marked 20/30, which means that it is only twenty-thirtieths of the normal.

The test is admittedly faulty, but it is the best at our disposal. It is faulty in that it takes no account of accommodation. Errors of refraction depend upon the size and shape of the eye. Some of these errors, when not too pronounced, can be overcome by action of the ciliary muscles which pull the optical parts of the eye into more obliging shape. In such case, if the error be not too gross, accommodation may overcome it altogether, although perhaps at the expense of considerable strain. In such a case the child would be suffering from eye strain, although the Snellen Test would show a visual acuity of 20/20.

From this it is also apparent that muscles of accommodation that are in good tone can overcome a larger error of refraction than those that are not. It is found that eyes will test out better in the morning, when the muscles of accommodation are rested, than late in the day, when they are tired. It is therefore not surprising to find an intimate relationship between nutrition and vision.

For purposes of comparison the children tested were divided into three groups:

Group I includes all children in which both eyes tested 20/20 or better. These are rated as normal vision.

Group II includes all children in which one eye, or both, tested 15/20. These are rated as slightly subnormal, and are to be kept under observation for further evidence of eye strain. Such evidence usually manifests itself in the form of headache, blinking, and a tendency to hold the printed page, when reading, in malposition.

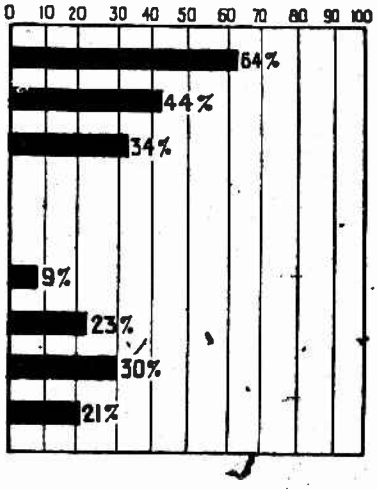
Group III includes all children in which one eye tested 10/20 or worse. These are rated as seriously subnormal. They are in need of the service of an oculist for more careful examination than is possible with the Snellen Test, and for advice and treatment.

TABLE 4.—*Relative visual acuity of 200 children in each of the three schools.*

Schools.	Group I.	Group II.	Group III.
	Per cent.	*Per cent.*	*Per cent.*
Riverside	44	33	23
Snowden	64	27	9
Grant (colored)	34	35	30
Average			21

The disparity between the Riverside and the Snowden children is striking but not surprising, when it is recalled that the precentage of underweight is 31 per cent and 18 per cent, respectively, for the two schools.

The Grant School (colored) made a worse showing than either of the white schools. But there was another factor to be reckoned with in applying the Snellen Test to the colored children: They did not seem to have the power of intense effort of the white children. Those who are familiar with the test as applied know that effort is an important factor in bringing the muscles of accommodation into action, and that, other things being equal, those children that try the hardest to see will see the best. The average of 21 per cent so seriously defective as to need advice at least of an oculist, is not surprisingly large. The examinations of several million children in all civilized countries show about 20 per cent as the average.



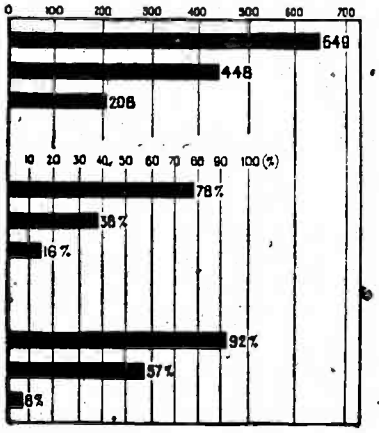
Teeth.—The teenth of the same 600 children were checked up with respect to the number decayed, filled, and extracted. The wealthiest group shows the worst teeth. Among the 200 children in the Snowden School there were 649 teeth that had developed decay; in the Riverside, 448; in the Grant (colored), 208. These differences are ot due to lack of dental care. In the Snowden group 78 per cent of the decayed teeth had received attention; in the Riverside group 38 per cent; and in the Grant only 16 per cent. Furthermore, the Snowden chidren had received early attention when the teeth could be saved by filling, as shown by the fact that of the teeth that had received attention 92 per cent had been filled as against 8 per cent extracted. The relative percentages for the Riverside group are 57 per cent filled, 43 per cent extracted; and for the Grant, 8 per cent filled, 92 per cent extracted.

These three sets of facts are shown in figure 2. No explanation of these disparities is attempted. The matter of practical importance is that so many who need early dental treatment do not get it when needed.

Tuberculosis.—No accurate survey of the extent of tuberculosis was undertaken. The best evidence available would indicate that for the country at large 5 per cent of the children have, or have had, incipient

tuberculosis. The data have been collected chiefly among the white population. Tuberculosis is unquestionably more prevalent among the negroes. Assuming 5 per cent for both white and black, there are in Memphis approximately 725 white and 375 colored children with incipient tuberculosis.

The only indication as to the number of acute cases among the children is furnished by the teachers' estimates. These estimates, 14 white and 20 colored, are probably short of the actual numbers.



Teachers' estimates of defective children.—In order to secure at least approximate information in regard to the numbers of certain groups of defective children, the teachers were asked to make a census of such children. This enumeration included not only such children in their respective classes but also children of school age not attending school who were known to the teacher. It could not be expected that these reports would be entirely accurate, but the evident thoroughness and care shown in the reports give confidence that they are not far wrong. In the case of feeble-mindedness, indeed, the number estimated by the teachers for the white schools conforms closely with the normal expectation, i. e., teachers' estimate, 101; normal expectation, 120. The results of this inquiry are shown in Table I. Each of these groups represents a special educational problem.

TABLE 5.—*Certain defective groups reported by teachers.*

Defective groups.	White.	Colored.	Total.
Markedly tubercular	14	20	34
Crippled	43	24	67
Deaf (or nearly so)	42	26	68
Blind (or nearly so)	25	18	43
Stammerers	45	57	102
Epileptics	8	9	17
Feeble-minded	101	105	206
Refractory	45	100	145
Others	302	828	1,190

Summary of conditions.—Assuming that the three schools are fairly representative of the physical status of Memphis school children, the salient facts may be summarized as follows:

TABLE 6.—*Summary of defective children.*

	White.	Colored.
Number 10 per cent or more underweight	3,700	1,800
Number of children testing 20/20 vision both eyes (Snellen Test)	8,000	2,466
Number of children testing 10/20 in one eye	2,376	2,218
Number of children with perfect teeth	1,856	3,696
Number of teeth that are or have been decayed	40,000	8,000
Number of these that have been:		
Filled	28,520	102
Extracted	2,480	1,178
Untreated	9,000	6,720
Number having incipient tuberculosis	725	378

In addition to these, there are the special groups of defectives shown in Table 5.

III. MENTAL STATUS OF CHILDREN.

The war brought up into clear daylight some things that we were blinking. One was that all men are not born equal so far as intelligence is concerned. Up to November 1, 1918, approximately 1,500,000 men in the Army were tested in accordance with mental tests prepared by a joint committee of the American Psychological Association and the National Research Council. The method of rating and the results of these tests are shown below:

TABLE 7.—*Mental tests in the Army in 1918.*

Rating.	Significance.	Approximate percentage of total.
		Per cent.
A	Very superior intelligence	4.5
B	Superior intelligence, but not up to A	9.0
C plus	High average intelligence	16.5
	Total of above	30.0
C	Average intelligence	25.0
C minus	Low average intelligence	20.0
D	Inferior intelligence	15.0
D minus or E	Very inferior intelligence	10.0

In further explanation of the ratings the committee states:

The immense contrast between "A" and "D minus" intelligence is shown by the fact that men of "A" intelligence have the ability to make a superior record in college or university, while "D minus" men are of such inferior mentality that they are rarely able to go beyond the third or fourth grade of the elementary school, however long they attend. In fact most "D minus" and "E" men are below the mental age of 10 years and are at best on the border line of mental deficiency. Many of them are of the moron grade of feeble-mindedness. "B" intelligence is capable of making an average record in college; "C plus" intelligence can not do so well; while those with a mentality of "C" grade are rarely capable of finishing a high-school course.

Attention is invited to this last clause, namely, that "C" grade is rarely capable of finishing a high-school course. It will be noted that above "C" grade are "A," "B," and "C plus" grades, which

are capable of finishing high school, and that these aggregate 30 per cent of the total number of men examined. This means, then, if it means anything, that of the men between 21 and 31 years old, only 30 per cent have the intellectual capacity required to graduate from high school. The other 70 per cent must perforce stop on this side of a high-school education. It means, if it means anything, that of the 2,216 white children in first grade in the Memphis schools, only 664 have the intellectual capacity to graduate from high school. The other 1,500 and more—what of them? The "D minus" and the "E" groups, about 225 in number, may struggle to the third or fourth grade; the remaining 1,300 or so will ultimately string along from the third or fourth grade to the eighth.

Upon the basis of native ability, children range from the very lowest order of intellect, idiocy, up through feeble-mindedness, dullness, average intelligence, superior intelligence, very superior intelligence, to occasional genius. There are no sharp lines of demarcation between these orders. They are like the keys of a piano—a gradual ascent from the bottom to the top. Every child has his place in this scale somewhere.

Now, it would be convenient to have some method of speaking of different parts of this scale, so that one could say of a given child, he stands at such or such a place in the scale of intelligence—an intelligence yardstick, so to speak. A rational approach has been made in the Binet-Simon scale and its derivatives. An average child has greater mental ability at 3 years of age than at 2; more at 5 than at 3; more than 10 than at 7. A child of 10 years has a chronological age of 10, but if the same child has the intelligence of an average child of 7 years, he has a mental age of 7 years. To secure a formula for the ratio of mental age to chronological age, the mental age is divided by the chronological age, e. g., mental age 7 divided by chronological age 10 equals .7, or 70 on the scale of 100. The result is known as the intelligence quotient or I. Q. A child 10 years of age with the mental age of an average child of 7 years has an I. Q. of 7 divided by 10, equal to 70 on the scale of 100.

Having now an intelligence yardstick, we are in position to understand something of intelligence distribution among children. A study of 1,000 unselected cases, 5 to 14 years of age, by Terman,[1] is very instructive. He arranges their I. Q.'s as follows:

The lowest 1 per cent go to 70 or below; the highest 1 per cent reach 130 or above.
The lowest 2 per cent go to 73 or below; the highest 2 per cent reach 128 or above.
The lowest 3 per cent go to 76 or below; the highest 3 per cent reach 125 or above.
The lowest 5 per cent go to 78 or below; the highest 5 per cent reach 122 or above.
The lowest 10 per cent go to 85 or below; the highest 10 per cent reach 116 or above.
The lowest 15 per cent go to 88 or below; the highest 15 per cent reach 113 or above.
The lowest 20 per cent go to 91 or below; the highest 20 per cent reach 110 or above.
The lowest 25 per cent go to 93 or below; the highest 25 per cent reach 108 or above.
The lowest third go to 95 per cent or below; the highest third reach 106 or above.

[1] Terman, Measurement of Intelligence, Houghton Mifflin Co., 1916.

Terman gives further point to these values by suggesting the following I. Q. classification:

I. Q.	
Above 140	Near genius or genius.
120–140	Very superior intelligence.
110–120	Superior intelligence.
90–110	Normal, or average, intelligence.
80–90	Dullness, rarely classifiable as feeble-mindedness.
70–80	Border line of deficiency, sometimes classifiable as dullness, often as feeble-mindedness.
Below 70	Definite feeble-mindedness.

Roughly, then, children may be divided into three groups—the "lower twenty," the "middle sixty," and the "upper twenty," meaning the lower 20 per cent, the middle 60 per cent, and the upper 20 per cent. It will be seen that the "middle sixty" includes normal or average intelligence. In the lower 20 will be found the "dullness, rarely classifiable as feeble-mindedness; the borderline deficiency, sometimes classifiable as dullness, often as feeble-mindedness; and the definite feeble-mindedness." These are distinctly misfits in a class with the middle 60, or average children. The upper 20 includes the "Superior intelligence, very superior intelligence, and the 'near' genius and genius." These are equally misfits in a class with the middle 60. But all these fits and misfits are lumped together into one class. The genius and near genius are in the same class with borderline deficiency often classified as feeble-mindedness. They are assigned the same lessons, expected to do the same work, take the same examinations, and pass or not pass according to the same standard.

Mental grouping applied to Memphis.—If Terman's proportions hold for Memphis, then we have here among 12,000 white children in the grammar grades (approximations only):

Group.	I. Q.	Per cent.	Grade of intelligence.	Number.
I	Below 70..	1	Definitely feeble-minded.....	120
II	70-80.....	4	These are the borderline cases; some of them are merely dull, but more are feeble-minded.	480
III	80-90.....	15	These are the duller slow mentality cases, rarely feeble-minded.	1,800
IV	90-110.....	60	These are children of average mentality. It is this group that the course of study is planned for, that the examinations are made for; all are expected to stand or fall according to the standards set by this group.	7,200
V	110-120....	15	These are of superior intelligence, and could in most cases complete the eight grammar grades at 12 years of age.	1,800
VI	120-130....	4	These are of very superior intelligence. It is a great injustice to them to hold them down to a course of study so far beneath their abilities, and to train them in habits of idleness for lack of something commensurate with their abilities. These are the future leaders of the nation.	480
VII	130 and above.	1	These are the "near" geniuses and the geniuses. The system is perpetrating the gravest wrongs upon them.	120

[1] Sixty per cent of all the wayward girls are found, according to latest venereal disease work, in the lower 20.

But where are these low-grade and high-grade pupils, Memphians will ask. Here is where some of them are. One, a boy of nine years,

was found in the Riverside School. He is both an *unfit* and a *misfit*. He is *unfit* in that he has some ill-defined nervous disturbance which would require further study before a working diagnosis could be made. He needs *physical* attention. He is a misfit, in that he has rare intellectual ability, and I. Q. of 135. In school he is reported a trouble maker. Yet it is admitted that he is good in mathematics. The truth is the boy has nothing to which to harness his mind, and it runs wild. Add to that an affliction, which gives him somewhat of a grotesque appearance, and the result is that he keeps the other children in an uproar. He is not working himself, nor is he permitting others to work. If his mind were harnessed to something commensurate with his abilities, his attainments would be noteworthy. As it is, he is a handicap to the school he is attending and the school is likewise a handicap to him.

In the Snowden School are some misfits. One a girl, a healthy, robust specimen, is distinctly feeble-minded; in there with the others of her age, struggling along, and the teacher struggling too, trying to get her somewhere, wearing out the teacher and robbing other pupils of time that is legitimately theirs.

It is safe to say that in every school in the city are to be found both unfits and misfits, the one suffering from some physical handicap, probably correctible, and the other from mental misplacement—placed with a group doing work for which the child in question can not do.

LIGHT FROM JUVENILE COURT SCHOOL.

The Juvenile Court School will throw some light on the effect of making misfits of children. The juvenile court receives pupils on three several counts, namely: Truancy, incorrigibility, and domestic unevennesses. The truancy children, Mrs. Tate stated, are there largely because of pending examinations they knew they could not pass. This condition of being a misfit in school leads to truancy, and to the court. The incorrigibles, to some extent, find their way to the juvenile court because they have been misfits in school. A probable case in point was A. S. At the time A. S. was in court, intelligence testing was unknown in Memphis, and so we have no record of his I. Q. But there is evidence that he was of superior intelligence. The record shows that he was reputed to be a great trouble maker and that he was tried out in several schools. The words used to describe him are "deficient," "brilliant," "erratic," "incorrigible." The record runs:

> Finally, after several changes, was brought to the juvenile court for following misdemeanor: Found a drunken man in Forrest Park asleep; bought 10 cents' worth of gasoline and poured it over him and set fire to it to see him run. The man was badly injured. The boy thought it was a joke. In

Juvenile Court School he always did most exceptional things. His remarkable talent or intellect discovered in his dramatization of trial of boy. He took issue with the teacher on some question of discipline concerning another boy. She said in fun, "You take charge of this case." He took her at her word, which she had the good sense to permit, took his seat as judge, appointed counsel for the defense, and prosecuting attorney, called witnesses, and disposed of the case in due form, and in a remarkable manner. * * * One day a traffic policeman at Main and Madison fainted, and traffic became confused. A. S. stepped in, took the policeman's club and directed traffic till relieved by an officer, and did it so well that the Memphis papers gave him a big write-up. He was 14 years old at this time. Erratic and brilliant conduct continued. Did exceptionally well in lessons. Fond of speaking. Always did the spectacular. When war was declared, he enlisted. Was found to have ability as radio operator. Was sent to Harvard and later to sea. Boat on which he was wireless operator was captured by Germans. Officer forbade his sending any message. He slammed the door in the officer's face, held it with his foot, sent an S. O. S. call, which was answered, then shot the officer, and jumped overboard, and was later picked up by an American vessel. Is in service now.

The Juvenile Court School was probably the best place for A. S. at the time. Here, it is true, he was mixed in with the incorrigibles, the truants, the feeble-minded, the brilliants, and the erratics, but, nevertheless, here at least, he could exercise his initiative without repression.

There are many more treatment records, to be found in the Juvenile Court School, but this will suffice to illustrate the point in question. By the law of average there ought to be 120 cases of feeble-mindedness in the schools, and as many more that are of such low grade intellect that they are almost equally difficult problems. Miss Mable Lee Cooper, psychologist of the board of education, whose generous help and cooperation has made this phase of the study possible, says in her report for last year: "There are approximately 300 pupils in our city schools who for some reason are not able to keep up with normal children." This says, by inference, that these are not normal children, they are misfits calling for further study and a reclassification. Miss Cooper goes on to say: "There is a second class who are 'mentally incapacitated to do school work beyond the second grade.'" More misfits. Now add to these the misfits by reason of superior intelligence and the list mounts up considerably.

These last misfits, those who are wrongly placed because of superior intelligence, are not only suffering a gross injustice themselves, and transmitting an injustice to the school through their own enforced idleness, but at the same time the State is being deprived of its most valuable asset, its potential leaders of men and women. And not only that, it is costing good money to keep these children back. We have seen that there are some 1,800 children, if the law of average holds for Memphis, who have an intelligence rating of "superior." These children, according to Terman, could, in most cases, complete the

eight grades in seven years. Here are, then, 1,800 school years lost through unnecessary retardation. Then we have, by the same reckoning, 480 children rated as "Very superior." These could complete the eight grades in six years. These lose two years each through unnecessary retardation. This makes another 960 school years lost, or a total of 2,760 school years lost in eight years, or an average of 345 school years annually. This is equivalent to maintaining, year in and year out, a white school of 345 pupils. Now, such a school costs at the present time, in Memphis, over $16,000 a year. It is true this is not a tangible asset, but it is none the less real.

There is no deception in these figures. They may not be quantitatively correct, but in principle they will not be challenged, and in quantity they are as nearly correct as the data at our disposal will warrant. *More money is lost in this one item alone than is necessary to maintain an adequate school health service.*

IV. WHAT IS BEING DONE.

It must not be inferred, from the preceding survey of conditions, that no notice has been taken of the unfits and misfits, and that nothing has been done toward relieving the situation. The character and extent of the measures already underway are shown in the following paragraphs:

Nursing service.—The board of health employs 15 school nurses, 1 in the office and 14 in the field. In addition to their public-school work, the nurses perform similar service in the parochial schools, in all about 25,000 children. They also do a good deal of general community work.

Primarily their duty is with the communicable diseases. Quite properly communicable disease is always the first concern of boards of health. It was communicable disease that first called a board of health into existence in America. The board of health in Memphis owes its establishment to yellow fever. Here, as elsewhere, therefore, the first duty of the health authorities is with the control of communicable diseases. The *individual* disabilities, "the diseases of heredity and neglect," are necessarily a secondary consideration.

The nurses have done a limited amount of work in the field of individual disabilities, but nothing commensurate with the needs. Last year, e. g., they found 380 cases of children whose eyes needed attention. According to the estimates recorded above, there are approximately 4,000 children needing such attention. It is not clear that all of the 380 detected cases received the needed attention.

Practically nothing has been done for the teeth.

This is no criticism of the nurses. The writer is witness to the multitudinous demands upon their time made by the communicable-disease work.

School-board efforts.—The school board has made two tentative approaches to the problem of malnutrition—the open-air school and the school lunch. Neither of these, however, goes far enough to make a real dent in the problem. The open-air school accommodates about 25 pupils; there are 4,000 who are 10 per cent or more underweight. Of tubercular children alone, even though the standard estimate is cut in half, there are more than 500.

The hot school lunch, even if adequately administered, is only one factor in the solution of the malnutrition problem. That the school lunches are not adequately administered in some of the schools at least is shown by the reference to insanitary conditions in the section on janitor service. (See Chapters III and IX.)

The misfits.—The educational authorities have taken steps also toward the solution of the problem of the mental and social misfits by the appointment of a school psychologist for diagnostic purposes, the establishment of a special school and the juvenile court school.

The psychological service has been put on as an isolated service. As such it can not function most efficiently. Mental deficiency and physical deficiency are so closely related that they can not be studied and treated separately without loss to both sides of the equation. In spite of this handicap the psychologist has proved to be one of the best assets of the educational system. Much has been accomplished in the way of testing and classifying the misfits.

The special school for certain of the mental misfits is good as far as it goes. It takes care of only about 25 children. According to the estimates of Miss Cooper, the school psychologist, there are at least 300 children needing such special care. The Juvenile Court School provides for a small additional number of mental and moral misfits (not always carefully discriminated). The combined facilities of the two schools, however, are quite inadequate to the needs even of the very deficient group.

No provision is made for such special groups of defectives as the cripples, the blind, the deaf, the stammerers, and the epileptics. These are all educable. When educated they are an asset to society, at least not a liability; when uneducated they are inevitably a liability. But they can be educated only when special provision is made for them.

SUMMARY OF EXISTING PROVISIONS.

Summarizing, then, there are in the elementary schools of Memphis some 20,000 children instinctively striving to grow up into healthy, intelligent men and women fit to bear their several parts in carrying on the civilization which is their heritage. Approximately two-thirds of them are "normal" in the sense that they are free from defects and disabilities that will permanently handicap them or

impede their growth and development. The other one-third are handicapped by disabilities and defects of such kind and degree that, unless corrected, they condemn these children to incomplete manhood and womanhood.

If these defects and disabilities were all irremediable, this discussion would be idle. But they are not all irremediable. Comparatively few are incurable, many may be completely cured or at least alleviated; others are tendencies to defects or weaknesses that can be largely overcome by protection and nurture, by humane and intelligent "child husbandry."

Furthermore, it must be recognized that the debt would not be paid, even if full provision were made for salvaging and protecting the one-third who are actually or potentially defective. It is even more important to provide for the full realization of the potential capacity of the normal two-thirds. This fact was emphasized painfully in our training camps, where it was made evident that a great many of the young men who had passed the physical examination were lacking in strength, endurance, agility, muscular control, disciplined initiative, and knowledge of how to take care of themselves. A large majority were *physically uneducated;* many were *physical illiterates.*

The job then is twofold: Negatively, prevention, correction and alleviation of deficiency; positively, stimulation, development, and training of potential capacity—"unchaining the powers of man for the sake of life itself—its vigor, its beauty, its expression."

The school can be but one factor in such a program of child husbandry. Good housing, good feeding, sane regulation of child labor, and provision for the husbandry of children under school age are essential. But the function, the obligation and the opportunity of the school as set forth in the first chapter of this report are great and imperative.

V. A PLAN PROPOSED.

Memphis should look forward to a well-coordinated administration of these several factors in human husbandry as applied to its schools—wholesome environment, hygienic management and instruction, health teaching, physical training activities and health supervision (with special reference to the unfits and misfits). As already indicated, both the school department and the health department have part in such work as is carried on. Their respective fields of service are not clearly defined, though at present there is no overlapping, chiefly, perhaps because so little is done. The health department attends to the inspection for contagious disease and affords some casual examination of individual disabilities. The school department is responsible for the physical training activi-

ties, the work for the misfits, and the conduct of the open-air school and the juvenile court school.

There should be established a line of cleavage between the functions of these two departments. This is not altogether an easy task. In practice there is wide variation. In England, Scotland, France, and Switzerland, for example, all school health work is administered by the education authorities. In the United States, of the States having comprehensive medical inspection laws, some provide for administration by the school department (e. g., Massachusetts, New York, New Jersey, Maine, California, Utah); some, by the health department (e. g., North Carolina, Florida); some, jointly by the school and health departments.

There are similar diversities in the larger cities. Boston, Cleveland, Newark, Los Angeles, and others concentrate all phases of school health work, including medical inspection for communicable diseases, under the school department. In others, e. g., New York Philadelphia, Chicago, Detroit, the health department is responsible not only for inspection for communicable disease but also for examination for individual defects and such remedial and corrective work as is carried on. In still others, e.g., Pittsburgh, Birmingham, St. Louis, the communicable disease work falls to the health department; all other phases of the school health work are taken care of by the school administration.

These diversities are not surprising and ought not to be disconcerting. Both public health and public education are recognizing their larger functions and obligations. The conception of health as a public responsibility grew out of the recognition that communicable disease is controllable. It has grown and expanded until it sees that it has a larger obligation to society than policing against germs. It aims at the conservation and promotion of the general health of the public. The public school was first of all a school for literacy. Attendance was voluntary. Compulsory school attendance is now practically universal. Coincidentally the conviction has ripened that education is more than literacy—that is, is a great enterprise in social engineering. Furthermore, it is recognized that compulsory attendance carries with it a very special obligation, namely, to educate the children who are compelled to attend school. This involves both the duty of guarding all children from untoward external conditions and of providing proper educational procedure for all children, including the unfits and the misfits. Finally, the school exists as an administrative instrument ready to hand for developing new and germane extensions of educational policy.

The line of cleavage.—It would seem that the real line of cleavage should be between functions that are medical and those that are educational. There is at present a twilight zone that must be explored

and delimited in accordance with administrative efficiency and economy.

If this is a correct analysis of the situation, Memphis should look forward to a health department with resources adequate for the performance of all specifically public health work. With respect to the schools, this would mean not only control of communicable disease but also provision for expert medical examination and remedial care of the children needing such service and who otherwise would not receive it. This service should be a part of the public health policy of the city and should be rendered to the children, not as school children, but as citizens of its future. It should not waste its resources by using expert medical or nursing service for formal supervision; it should conserve its resources for expert medical and nursing service. Ultimately this must mean the provision of public clinics, not exclusively for school children but equally for children under school age and for the general public. Whether the clinics are located in school buildings or elsewhere is purely a matter of convenience.

On the other hand, the schools should organize the resources to take care of all other phases of the total program. If this principle is adopted, the twilight zone problem will be successfully solved.

Lack of funds.—As matters stand, neither the health department nor the school department is in position to carry out its part of the program. Neither has the financial resources to do what it should do. In the section "The Ability of Memphis to Finance the Proposed Program" (see Part II of this report), it is shown that Memphis does not measure up to the average of the cities of her class in financial support either of health and sanitation or of schools. The per capita expenditure for the former was, in 1917, $1.38 as against $1.94 average; for schools $3.68, as against $5.91. The undeveloped state of the public health work in Memphis is shown by the fact that it does not employ a full-time health officer. Here is a city approaching 200,000 population, destined to reach half a million in the next decade, and yet not sufficiently concerned about its health problems to train one man's full thought and full time upon them. The superintendent of health, the secretary, the health officer, able physicians with large practices, all jointly running a machine that no one of them is employed to train his full thought upon! It should be understood that conservation of the general health is a specialty in medicine. It should be understood further that public health procedures have not been so standardized that the machine can be set going with the assurance that it will go on automatically. It is a live, growing, charging thing, and one that calls for the best thought that the best man in the community can give it. Commercial interests are finding this out and are spending large sums of money in safeguarding the health of their employees, because they are finding

that it pays in dollars and cents to do so. The Metropolitan Life Insurance Co., for example, spends large sums annually in safeguarding the health of its policyholders because it pays. The Tennessee Coal and Iron Co., of Birmingham, with its subsidiary companies, employs a large number of people, 50,000, perhaps. For several years past this company has been spending increasingly large sums to conserve the health of its employees, because it pays.

The undeveloped state of the school system is illustrated by comparison of Memphis, with respect to the unfits and misfits, with cities in which special classes and supervision are provided for the deaf, the semiblind, the speech defectives, the anemic, the cripples, and the mentally defective.

A working plan.—It is safe to assume without question that the physical training activities, the conduct of special schools for exceptionals of all kinds, the teaching of health and the maintenance of hygienic school management, belong to the school. The twilight zone is in the realm of disease, defect, and disability. Taking conditions just as they stand, assuming no immediate large increase in the resources of either department, it is recommended that the line of cleavage be drawn tentatively between communicable disease and the disabilities due to heredity and neglect. Let the department of health be responsible for the former, the department of education for the latter.

BOARD OF EDUCATION.

The disabilities of heredity and neglect, as errors of refraction, decayed teeth, accumulations of tartar leading to diseased gums and pyorrhea; accumulations of wax in ears, dirty teeth, skin, nails, scalp; malnutrition due to errors of diet, including kind, quantity, and preparation; and errors of habit, as too little sleep, too great activity; and postural defects, such as drooping shoulders, loose and slovenly gait, etc.

It will be noted that many of these deficiencies are due to neglect and are to be corrected by instruction and training. Others are genuine ailments and defects that, though requiring expert medical diagnosis and treatment, are easily detected by anyone with ordinary intelligence and a little training in observing symptoms.

DEPARTMENT OF HEALTH.

The acute communicable diseases, as diphtheria, measles, mumps, scarlet fever, whooping cough, smallpox, chicken pox, rabies, cerebrospinal meningitis, infantile paralysis, etc.

The insect-borne diseases, as malaria.

The diseases of intestinal origin, as typhoid, the various forms of dysentery, cholera, hookworm, etc.

The social diseases, as tuberculosis, the venereal diseases, etc.

The above groups, it will be noted, are those that belong logically to the health organization. But this leaves unplaced that phase of child conservation extending from conception to entrance into school. It is this period that covers the most critical time of existence and calls for prenatal supervision, as in the training and licensing of midwives; providing literature for expectant mothers, etc.; and preschool supervision, covering the six tender years in which the death rate is highest, and when resistance is lowest. This phase logically belongs to a subdivision for child hygiene in the health department.

Advantage of the plan.—In practice such a plan would work out admirably in Memphis. By relieving the school nurses (who con-

stitute part of the health department forces) of a part of the work they are now endeavoring to do, the health department would be enabled to take on the preschool work, without additional appropriation, a work which is sorely needed, and which at present gets little more than passing notice from any source.

It would open up to the schools teaching opportunities to which they are now oblivious. This is perhaps the most important aspect of the whole matter. In the matter of health the principle, neglected since the days of apprenticeship of *learning to do by doing*, might come into its own. We do not learn how to conserve health by listening to lectures, or reading books, or studying physiology or hygiene, or having a health department to do those things for us; we learn to conserve health by conserving it. For example, let us take the matter of measuring up our children upon the basis of height, weight, age, grade, eyes, and teeth. It is no small undertaking to keep record of 22,000 children, and upon the basis of measurements to determine who need the attention of the dentist, or of the oculist, or who need their nutrition looked after. It is such a large undertaking that many communities would say they could not afford it on account of cost. But how long would it take to do it if 500 workers were trained upon it? In groups of 5, they could do 100 a day with ease. There are 1,000 eighth-grade pupils in the Memphis schools, half of whom under intelligent supervision and direction could keep an accurate set of records of the entire schools. In the examinations that were made in the Riverside, Snowden, and Grant schools (the latter colored), most of the work was done by a team of eighth-grade girls under supervision. Four eighth-grade colored girls at the Grant School, for instance, made all of the examinations and records, except the eyes.

Coordinate present agencies.—If the recommended line of cleavage is adopted, the next step in organizing a working program for the schools is to coordinate the agencies now at work and to give them unified direction.

The nucleus of a practical teaching and health inspecting service exists already in the temporary provision for the modern health crusade work. This is now an isolated piece of work. It should be integrated with the plan of health teaching heretofore outlined, and this plan of health teaching in turn should be developed to include the organization of a health inspection service by the older and more capable pupils.

The school phychologist and the special school for mental misfits make the nucleus of an administrative unit to take care of all classes of exceptional children, the neurotic, the deaf, the semiblind, the speech defectives, as well as the various grades of mental misfits.

For the active phase of physical education there is something more than a nucleus in the department of physical training; it is rather an organism that is suffering from arrested development. Suggestions have already been made for lifting the causes of arrest and for enabling this phase of education to contribute in full measure toward making all the children stronger, more resilient, more resistant, better coordinated. *The one thing lacking is to have all this coordinated under a single competent head.*

The three steps necessary to put these recommendations into effect are:

1. For the board of education and the department of health to adopt the "Line of cleavage" herein proposed.

2. For the board of education to create a department of "School hygiene" or "Physical and health education" and to bring together in this new department the health-crusade worker, the physical director, and the psychologist.

3. For the board of education to secure, as head of the department of school hygiene, one whose abilities are commensurate with the magnitude and importance of the undertaking. Preferably, in order to coordinate properly the several branches of the work, he should be a physician, with knowledge of clinical psychology and the principles of physical education. He should know present-day educational conditions. Above all he must have organizing ability. The entire success or failure of this program rests upon this selection. Better leave it alone than undertake it without adequate directive energy behind it.

Such a department of school hygiene should begin with the forces enumerated above. Obviously effort should be directed to meeting the physical needs in a broader way. All development should be based upon examination and actual findings. To this end the first work of the director should be to institute a system of examinations and records city-wide in scope and covering the most common physical defects, such as nutrition, shown by age, height, and weight; visual acuity, and condition of teeth. The findings will indicate to what extent provision should be made for looking after nutrition.

From the indications in hand it is probable it will be found that the facilities for combating undernourishment are at present totally inadequate. As pointed out the midday lunch, by itself, hardly scratches the surface of the problem. The open-air school, even if it were a complete preventive, takes care of only 25 children. There are at least several hundred undernourished children. Development of this service should probably be in the direction of nutrition classes for the undernourished, conducted along lines worked out by Dr. W. R. P. Emerson, in New York. It is the most effective method

yet devised for meeting the needs of malnutrition in a large way. Moreover, it has a teaching value of the first order, the children studying their own cases in class and, under intelligent guidance, bringing their own weight up. In that case the open-air school could be kept for the worst cases, those that would not profit by the nutrition class.

It goes without saying that the eyes and teeth of all children in need of attention should have it. It has already been suggested that ultimate clinical facilities sould be provided, not for children as school children, but for the school children as part of the public citizenship.

VI. THE HIGH SCHOOLS.

The report of the National Education Association commission on the reorganization of secondary education on "Physical Education in Secondary Schools"[1] sets for the minimum program of physical education that schould obtain in any modern city high school. Approximately this program is now in operation in many cities; in some it is exceeded. The essential principles underlying this report are given in the following quotations:

> In the new civilization one of the most important problems of the high school, and the central problem of physical education, is how to secure and conserve health. This is becoming more and more a community problem.
>
> The schools have been slow to adjust their program to the changed needs of the pupils and the community. Pupils no longer go to school three months in the winter to learn to read, write, and cipher, securing their vocational skill and bodily power during the other nine months. They go to school nine months and are idle the other three because the opportunities for developing vocational skill and bodily endurance have been taken away from them with the removal of industry from the home to the factory. The school must accept the new conditions of this industrial age and provide adequate opportunity for bodily exercise related to vocational skill and for the fundamental bodily exercises related to health.
>
> Many people to-day are preserved to maturity who formerly would have died in childhood. Medicine has made splendid strides during recent years in decreasing the mortality due to zymotic diseases. The diseases which are increasing, those of the nervous system, are more inimical to the organic health of those who survive than are the infectious diseases.
>
> While the increase in nervous diseases is rightly charged to a failure of bodily adjustment to the environment of the new civilization, to the saving of the weaker ones who formerly died in infancy, and to the greater strain of modern conditions, and although the number so classified is due in part to better diagnosis, it is a just indictment to say that the public schools have materially helped to augment conditions which lead to these diseases. It is not enough that the schools should not continue to increase the tendency to these diseases; they should in a constructive way assist in the necessary health adjustments of the pupils in city and country. It is the firm belief of this commission that the modern public high school owes a duty to the health of the adolescent

[1] This report is published as Bureau of Education Bulletin, 1917, No. 50.

youth of this country as a fundamental element of education. It is the belief of this commission that this duty is possible of fulfillment.

So far the public school has preempted the field of health education without occupying it. Theoretically, educators believe that health is more important than quantity of knowledge; practically, they seldom act upon the belief. The program of studies has not been adjusted to meet the changed needs of the pupils. The present arrangements for physical activity can be looked upon only as palliative measures in that they give some relief from the school desk. They are essentially of negative character, aiming to minimize harmful influences. The work of the schools calls primarily for the functional activity of the higher centers of the central nervous system. It fails to emphasize the principal positive hygienic factor in that it disregards the motor activities related to the lower nervous centers controlling circulation, respiration, nutrition, and elimination. Besides, it neglects an important phase of education in that it minimizes to the vanishing point those motor activities related to good carriage, motor presence, motor personality, and motor consciousness. The attainment of adequate motor control is impossible with the present equipment and time allotment.

Health is definitely related to the vigorous use of the big muscles of the trunk and legs. Instruction should be given in exercises and games which will bring into play these large fundamental muscles and should be pushed far enough to stimulate circulation, respiration, and perspiration. Methods of study should be devised which will allow more freedom and bodily movement even in academic work.

The tendency in some quarters to substitute military drill for more fundamental activity is a serious mistake. The addition of physical education to military drill for the rank and file of the armies of the world is a significant fact which should make clear the folly of such substitution. The thorough physical education courses at West Point and Annapolis, in our own country, and the fact that an Army officer was sent to the United States by the Dutch Government to take normal courses in physical education at Springfield, to prepare himself to take charge of physical education in the Dutch military academy, show the need of the basis of an all-round motor training. In order to insure the preservation of health and the educational point of view in physical exercises, the administration of physical education should be lodged in the hands of the educational authorities exclusively. No narrow policy of mere military drill should be substituted for a broad program of fundamental health activities.

The war has amply confirmed these observations in regard to military training.

The health needs of the high-school pupil call for the following health program:

I. A careful health examination which should include:
   A. Medical inspection.
   B. Mental examination.
   C. Physical examination.
II. A healthful environment in home and school.
III. Instruction in health problems.
IV. Physical activity.
   A. Equipment, minimum requirement.
   B. Amount and kind, minimum requirement.
   C. Kind of exercise.
V. School credit.

That the Memphis high schools fall far short of realizing this program is obvious.

Health examination.—The only health examination given to high school pupils is the medical examination given to the prospective cadets. This follows, strictly, the army examinations. Its purpose is solely to eliminate the unfit; its purpose, in no sense, is to "discover how nature has endowed the individual." There is no mental examination, the necessity for which is shown in the section of this report on "Mental Status"; and no adequate physical examination calling for a "close study of the growth and physique of the pupil and a close correlation of the conditions found with the physical activity prescribed." For the girls there is no health examination. In view of the amount of personnel devoted to physical education in the high schools such examination is practically out of the question.

Healthful environment.—The possibilities of a healthful environment in the Central High School are large, but they are not fully realized, in the judgment of the survey force. This is not a matter for detailed specification; by way of illustration, however, it was found that one toilet room for boys was lacking in adjacent lavatory facilities. Close sanitary supervision of school plants as recommended in the section on that topic would reveal the defects and the remedies for defects.

The Vocational High School has small possibilities. A new building at the earliest possible time is the solution of that problem. The obvious remedial improvements are summarized in the section on buildings.

The Colored High School as it now stands has no possibilities. It is a liability only.

Instruction in health problems.—Apparently little attention is paid to this matter on the program of studies. The report above referred to makes the following recommendation:

> The pupils should be given instruction in: (a) The practical elementary problems which concern their health; as, for example, diet, care of the teeth, sex, sleep, exercise, and bathing in school and at home. (b) The general conditions related to health, as room temperature, ventilation, dust, school seatings, and posture. (c) The public-health problems, like sewage disposal, milk and water supplies, and general control of infectious diseases.
>
> Every pupil in the high school should be acquainted with elementary health problems in his environment. Direct application should be made to home, school, and community conditions. Definite reports of health conditions which test the powers of observation should be required. The examinations should test both the knowledge and the health habits of the pupils in home and school.

Physical activity.—In the report above referred to the requirements for physical activity are treated under three heads: Equipment, amount and kind (time allotment), kind of exercise.

Equipment.—The Central High School has magnificent outdoor possibilities. The 12 acres of level ground included in the school property offer ideal conditions for a well-nigh perfect organization of outdoor physical training activities. At present the possibilities are unrealized. The grounds are in a state of nature.

The indoor facilities are inadequate. There is one small gymnasium that must be used by both boys and girls. The shower bath, lockers, and dressing room facilities are only moderately satisfactory. There is no swimming pool. A temporary armory has been provided in connection with the military training. This is for storage of military equipment, not for exercise space.

The Vocational High School is lacking in both indoor and outdoor facilities. The gymnasium assembly room is entirely unsatisfactory; there are no bathing or dressing accommodations. The grounds are too limited for anything more than class exercises. There is no space for even teaching the elements of the more important athletic games.

The Colored High School has no facilities.

Time allotment.—In the Central High School each pupil is supposed to have 2 one-hour periods a week in the gymnasium. This is in charge of two teachers, one for each sex. As there are approximately 600 students of each sex, the fulfillment of the requirement would mean that each teacher would teach 48 pupils five hours a day, every day in the week. As a matter of fact, the teacher for the boys gives but half of his time to this work, the other half being devoted to supervision of the work in the elementary schools. No provision for physical training is made on the time schedule of the school. Classes in physical training have to "come when they can." The result is that some are entirely debarred from physical training by program conflicts; and these make necessary the assembling of mixed groups. One class of girls visited had representatives from all classes, from the first to the fourth year. Obviously, such a condition is fatal to real educational work. Pupils see no orderly progress in their attainments. They see only repetition of exercises having no logical gradation. Inevitably they come to think of physical training as a side show, not as a vital part of their education.

This condition might be alleviated by the use of the older pupils as group leaders, but this could not be done successfully by the merely fortuitous mingling of younger and older pupils. It would have to be as a result of definite planning and the training of capable group leaders.

In the Vocational High School and in the Colored High School there is no regular schedule of exercises.

Kind of exercise.—For the boys in the Central High School there are the gymnasium exercises, as indicated above, consisting largely

of calisthenics and light gymnastics. Little or no time is given to teaching games and outdoor sports. Practically nothing is done for the weaker and deficient individuals (the high school quota of the fatal one-third immortalized by the selective draft). These defects of procedure are not due to lack of recognition of their importance on the part of the teacher—he is keenly aware of their importance; under the conditions he can work only with the mass.

In addition to this regular physical training schedule, a good deal of attention is given to competitive athletics, for which a coach is employed. This, of course, reaches only a small minority of boys who are rigorously selected for intensive athletic training, not in the interest of their physical development, but in the interest of inter-school competition.

Recently, military training under the Junior Reserve Officer Training Corps provision of the War Department has been introduced. The program calls for one-half hour a day of military drill, including setting-up exercises. It bears no organic relation to the general program of physical education.

For the girls the entire physical-education program is covered by the two hours a week in the gymnasium. The exercise consist of calisthenics, light gymnastics, games, and dancing. No outdoor games are taught.

At the Vocational High School there is no systematized physical exercise other than the military drill. There has been sporadic cultivation of such athletics as football, baseball, and basket ball, but no regular provision has been made for this by the employment of a coach.

In both schools the customary "evils of athletics" are in evidence, evils which spring from failure to direct athletics for educational ends.

Extending benefits of athletics.—How the benefits of athletic games can be extended to all pupils is admirably illustrated by the Oak Park and River Forest Township High School in the suburbs of Chicago.[1]

> The purpose of all education is to train for citizenship. Physical education has to do with the health, the growth and development of our physical beings. We look after the health and physical development of our bodies, not primarily to make the human a stronger and more powerful animal, but to make him more able to assume his duties in society—to make him a better citizen. Physical education, then, to be education, must train for citizenship. Athletics are usually considered a phase of physical training or physical education. But to be classified they must be educational, and where they are educational they most certainly train for citizenship.
>
> The most important criticism directed toward our interscholastic or intercollegiate athletics is that we overdevelop a few and neglect the masses, and

[1] Citizenship and Athletics—A Concrete Example. By Glenn F. Thistlethwaite, physical director, Oak Park, Ill. S., Ill. "Mind and Body," March, 1919.

it is this mistake that demands immediate remedy. Correct this mistake and the other objectionable features will take care of themselves. When our athletes are meeting the Nation's demands in such an encouraging way the deplorable feature is that we have produced such a small number of them. While one Hobie Baker is doing such great deeds of valor as an aviator in France, think of the hundreds of others who are being rejected for different branches of the service because of physical defects.

The remedy for this error is intraschool or intramural athletics; in fact this is the panacea for all our athletic troubles. This is an old term, and a large per cent of our schools claim to have intramural sports, but what are they? Usually a few interclass games, played after the close of the regular seasons, or if during the regular seasons, pushed over to one corner of the athletic field or given the gymnasium on Friday afternoon when the varsity is not using it for practice. Such intramural athletics may pass as an excuse but nothing more. They do little good, and after a game or two the players drop out because of the lack of interest. Enthusiasm can not be kept up in something that is given little importance in the school. They should be made as much a part of the school as the interscholastic athletics, so far as the boys are concerned. What is good for the few is good for all. All have an equal right to the use of the school property, the gymnasium and the athletic field, and to the teachers' assistance.

We need more school teams, so that our athletics may be representative of the different stages in the development of our boys. In place of one team in a given sport there should be at least three, with the division made on the basis of weight and age. In sports like basket ball, football, and wrestling the weight is the important factor and is generally used as the basis of division, but in track, baseball, and soccer, where the superiority lies in endurance and skill rather than in strength, age is the best basis of division. With the number of school teams multiplied by three the number of boys participating is naturally increased in like ratio. This alone will account for the greater number of boys physically able to engage in competitive games in a small school with less than 100 boys. In larger schools, with the school sports designated as heavyweight, lightweight, and midget weight, or major, minor, and subminor, it becomes an easy matter to organize intramural leagues in each division.

In general the idea of mass athletics, as has just been outlined, is in substance the plan that the Oak Park High School Board has been gradually putting into effect during the last five years. The detail of the system has been left with the physical directors, but the board has stood sponsor and furnished the protection and inducements for furthering the plan. The path has not been a rosy one. The transition of a school that was saturated with the one-team idea into one for every boy in the game has been most difficult. The community has learned to think in terms of national championships. Football was the subject of discussion at the breakfast table, at the club, and even at church, and members of the team could have anything in the town for the asking. For a school board to change the athletic policy and have the time and energy of the coaches devoted to the interests of all the boys to the neglect of the school heroes took courage. In spite of the fact that all football games were won the first season, the followers of the team had become such expert critics that they were not satisfied with the small scores and predicted calamity. The next season, after winning the first seven games, the team lost three games. The community was disgraced, and for the time being the bottom fell out of Oak Park's reputation. But gradually the public settled down to a new level and began to take a different view of things. By

degrees people awoke to the fact that an unusual number of boys were participating in the athletics. Parents began to notice that their own boys, in place of merely being the cigarette-smoking rooters, were taking on those signs of robust health and enthusiasm over themselves that they had admired in the eleven boys on the field.

No figures have been kept to show the exact number of boys taking part, but the number on the various teams in competition during last year runs over 1,000. Probably 50 per cent of these are duplicates, so it would seem that about 500 of the 600 boys in the school get into some form of organized team play.

There has been a very noticeable improvement in individual honesty and sportsmanship. The moral code in athletics has always been a most peculiar one. If a man should try to improve his lie in golf or deliberately call the score wrong in tennis no one would play with him, but in our highly organized games the referee or umpire is the sole arbitrator, and anything that escapes his eyes is considered legitimate by both players and spectators. In the intramural games students act as referees but perform little more than the mechanical part of the official's duties. Decisions are seldom disputed and questions of right or wrong are usually quickly settled by a majority opinion without any appeal to higher authorities. This democratic control makes any boy who would use foul tactics very unpopular, and no boy will long stand against the ill will of his fellows, and as a result, a spirit of good sportsmanship and clean play dominates the whole athletic situation.

VII. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS.

1. Every school should have decently adequate playground space and simple and inexpensive equipment.

2. Centrally located athletic fields should be provided in each logical school district.

3. Coordination of the school and community playground and athletic activities should be effected by placing them under a unified administration. Also an arrangement should be made between the board of education and the recreation commission, whereby the director of physical education in the schools shall be the responsible director of "physical recreation" supported by the commission.

4. Such school-community organizations as the parent-teacher associations should be encouraged to supplement public funds and official interest in the equipment and maintenance of school playgrounds; and in turn to stimulate and encourage official interest and the appropriation of public funds.

5. Such organizations as the Boy Scouts, Girl Scouts, Camp Fire Girls should be encouraged and coordinated insofar as possible with the administration of school and community physical education.

6. The director of school and community physical education activities should be paid a salary commensurate with the importance of his duties; and provision should be made for sufficient assistance in order that the teachers may be properly instructed and supervised.

7. Each of the high schols should be provided with a sufficient number of well-paid teachers of physical education, so that the prin-

ciples outlined in the report before referred to may be incorporated gradually into the program of the Memphis high schools. It is idle to make extended recommendations in regard to equipment, courses, and methods, unless there is first a provision for the human agents to use the equipment and to develop course and methods.

In the Central High School there are needed at least four teachers of physical education, one head teacher and one assistant teacher for each sex. The supervisor of physical education who now gives half time to the high school should be relieved. His full time is needed for general supervision. In the Vocational High School and in the Colored High School, one teacher for each sex in each school is needed. Under the scale of salaries recommended in the section on Administration, Memphis can secure teachers that measure up to the indicated requirements.

8. The 12 acres of unused grounds at Central High School should be drained and graded. A large part of the physical exercise of high-school pupils in Memphis should be out of doors all the year round, and these grounds are needed for this purpose. Indoor facilities are needed for inclement weather and can be advantageously used also for the mere formal work of gymnastics. It is an axiom to-day, however, that the indoor gymnasium is to be used only when outdoor exercise is impossible.

9. Enlarge the indoor facilities at the Central High School, especially for bathing and dressing. There is immediate need for two gymnasiums in order that the two sexes may be equally and adequately provided for. Ultimately these two gymnasiums should form a new unit of construction in the rear of the shops, at the edge of the athletic field. Each should be fully equipped with lecture rooms for teaching hygiene and with dressing and bathing facilities, including bath, shower baths, and swimming pools.

As a temporary expedient a movable gymnasium for boys should be provided and placed in the position above indicated. If the type of building described in the section on Building were used the cost would not be excessive.

This arrangement would leave the present gymnasium for the use of the girls.

Facilities for physical education are so lacking in the Vocational High School that the only logical recommendation is a new plant. Resourceful teachers, however, can do something with very meager equipment.

10 For the most part the development of the procedure of physical education should be left to competent teachers. As an administrative matter, however, those responsible for the administration of the high schools should adopt the interpretation of physical

education set forth in the Report of the Commission on Reorganization of Secondary Education and should begin at once to incorporate that interpretation into the program of the Memphis High Schools. Certain points should receive particular attention.

(A) A progressively graded course in physical education covering both instruction in hygiene and physical training activities should be projected. A correlative of this is, that provision must be made in the program schedule for classes in physical education, as genuine classes, not as mere fortuitous groupings of individuals. At least four periods a week should be provided. The report of the Commission on Reorganization of Secondary Education recommends strongly that these be grouped into two double periods and give a sample schedule worked out on that basis. It should be understood that these periods primarily are for teaching; that they do not furnish the amount of exercise needed by students. They must be supplemented by "after-school" games, athletics, and other forms of exercise. Work should be included, but work should be evaluated in terms of physical development.

(B) Provisions should be made for at least an annual examination of high-school pupils with the object of a clear understanding of the developmental needs of each individual. The examination should be recorded and used for charting the work of the individual pupil.

(C) School credit should be given for the work in physical education. The recommendation of the report previously cited is as follows:

> The courses in hygiene should receive credit on the same basis as other classroom subjects. The physical practice in gymnastics, athletics, games, and swimming should receive positive credit on the same basis as laboratory courses. The hygiene instruction should be graded on the basis of classroom recitations and examinations. The physical practice should be marked on the basis of the quality of the work and on the effort of the pupil in daily practice. Tests of minimum physical proficiency should be given at regular intervals.

An improvement upon this would be to include three elements in the grading: (1) Information acquired as shown by recitation and tests; (2) personal health progress as shown by growth, freedom from illness, correction of defects, etc.; (3) progress in physical ability as shown in mastery of the various physical training activities.

(D) Athletics must be recognized, clearly and unequivocally, as a part of the physical education program, and must be brought under the exclusive control and direction of the school. Interschool competitive athletics should be retained and wholesomely controlled; but the benefits of athletic games should be extended to all the pupils.

(E) Military training should be brought into its normal coordination with physical education. The details need not be specified. They must be worked out through intelligent cooperation of the military instructor and the physical instructor.

(F) The work in physical education in the high schools must be seen in its relation to the elementary school program and to the general community scheme for physical recreation. Hampering restraints must be avoided, but administrative coordination is necessary.

11. Define the respective obligations and duties of the health department and of the school department with respect to health examination and supervision. Increase the facilities and financial support of both departments.

12. Coordinate the several lines of work now carried on by the schools in a division of school hygiene or "school health service" in charge of a director who combines technical and executive competence.

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