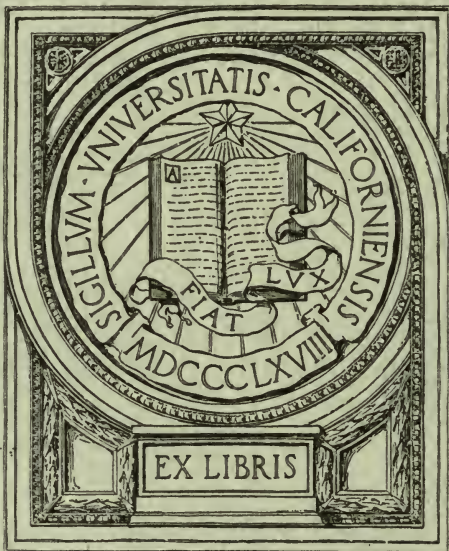


UC-NRLF



\$B 95 970

GIFT OF
MICHAEL REESE



EX LIBRIS



Digitized by the Internet Archive
in 2007 with funding from
Microsoft Corporation

REPORT OF THE COMMITTEE OF
FIFTEEN ON ELEMENTARY
EDUCATION & WITH THE REPORTS
OF THE SUB-COMMITTEES: ON
THE TRAINING OF TEACHERS; ON
THE CORRELATION OF STUDIES
IN ELEMENTARY EDUCATION; ON
THE ORGANIZATION OF CITY
SCHOOL SYSTEMS



PUBLISHED FOR THE NATIONAL EDUCATIONAL
ASSOCIATION BY THE AMERICAN BOOK
COMPANY & NEW YORK, CINCINNATI, CHICAGO

M D CCC XC V

LB 555

N2

64959

Copyright, 1895, by

THE NATIONAL EDUCATIONAL ASSOCIATION.



PREFATORY NOTE

THE origin and preparation of the Report of the Committee of Fifteen have been stated by its chairman in the Introduction to the report on pages 7-18.

The PRELIMINARY REPORTS of the three sub-committees—*On the Training of Teachers, On the Correlation of Studies in Elementary Education, On the Organization of City School Systems*—were read before the Department of Superintendence, at Cleveland, and discussed. These preliminary reports have been published in educational periodicals.

During the session of the committee, at Cleveland, instructions were given for the completion of the entire report, including important extracts from letters by distinguished educators to the sub-committees, which make substantial and valuable additions to the reports. The final report, thus completed, was placed in charge of the Board of Trustees for publication, under the control of the National Educational Association, that it may be obtained in a permanent form, at a nominal cost, as the official Report of the Committee of Fifteen.

After correspondence was had with Hon. William T. Harris, United States Commissioner of Education, and others, it was deemed best to arrange for the publication of the Report of the Committee of Fifteen, as a companion to the Report of the Committee of Ten, and thus cover the entire course of instruction from the primary school through a preparation for college. Favorable arrangements have been made for its publication in this manner; and, as in the case of the Report of the Committee of Ten, any profit which may be derived from the sale of this Report of the Committee of Fifteen will be credited to the "Emergency Fund" of the National Educational Association, the conditions and purposes of which fund are stated in the resolution adopted when it was

established ; viz., " Said fund shall be subject to expenditure by the Board of Trustees in accordance with votes of the Board of Directors at any regularly called meeting ; and it may be used for the purposes of meeting deficiencies of income of the Association, and for such additional investigations and publications as may be determined by said Board of Directors."

The permanent value of the report, and its convenience for ready reference, are greatly enhanced by a full index.

N. A. CALKINS,
*Chairman of the Board of Trustees of
The National Educational Association.*

CONTENTS

	PAGE
INTRODUCTION	7
REPORTS OF SUB-COMMITTEES ON	
I. The Training of Teachers	19
II. The Correlation of Studies in Elementary Education	40
III. The Organization of City School Systems	114
APPENDICES: OPINIONS SUBMITTED TO SUB-COMMITTEES ON	
I. The Training of Teachers	135
II. The Correlation of Studies in Elementary Education	157
III. The Organization of City School Systems	198
INDEX	227





REPORT OF THE COMMITTEE OF FIFTEEN

INTRODUCTION

TO THE DEPARTMENT OF SUPERINTENDENCE
OF THE NATIONAL EDUCATIONAL ASSOCIATION :

THE undersigned, chairman of the Committee of Fifteen; appointed at the meeting of the Department of Superintendence held in Boston, Mass., in February, 1893, would respectfully report :

On February 22, 1893, the following resolution was adopted by the Department of Superintendence, on motion of Superintendent Maxwell, of Brooklyn, N. Y. :

Resolved, That a Committee of Ten be appointed by the Committee on Nominations, to investigate the organization of school systems, the coördination of studies in primary and grammar schools, and the training of teachers, with power to organize sub-conferences on such subdivisions of these subjects as may seem appropriate, and to report the results of their investigations and deliberations at the next meeting of the Department of Superintendence.

Resolved, That the officers of the Department of Superintendence be, and hereby are, directed to make application to the Board of Directors of the National Educational Association for an appropriation of twenty-five hundred dollars to defray the expenses of the Committee of Ten and of the conferences which that committee is empowered to appoint.

On February 23 the Committee on Nominations appointed the following Committee of Ten :

Superintendent William H. Maxwell, of Brooklyn, N. Y.,

chairman; Dr. William T. Harris, United States Commissioner of Education; Superintendent T. M. Balliet, of Springfield, Mass.; Superintendent N. C. Dougherty, of Peoria, Ill.; Superintendent W. B. Powell, of Washington, D. C.; Superintendent H. S. Tarbell, of Providence, R. I.; Superintendent L. H. Jones, of Indianapolis, Ind.; Superintendent J. M. Greenwood, of Kansas City, Mo.; State Superintendent A. B. Poland, of New Jersey; Superintendent Edward Brooks, of Philadelphia.

On motion of Superintendent Maxwell, the members of the Committee on Nominations were added to the Committee of Ten, so that the committee became one of fifteen. The names thus added to the committee were the following: President Andrew S. Draper, of the University of Illinois; Superintendent E. P. Seaver, of Boston, Mass.; Superintendent A. G. Lane, of Chicago, Ill.; Superintendent Charles B. Gilbert, of St. Paul, Minn.; Superintendent Oscar H. Cooper, of Galveston, Tex.

The application for an appropriation to defray the necessary expenses of the committee was presented to the Board of Directors of the National Educational Association, but no action was taken by that body until July, 1894, during the meeting at Asbury Park, N. J., when the sum of one thousand dollars was set apart for the purpose.

In the mean time, however, the committee had not been idle. Individual members had been collecting information and exchanging views by correspondence. During the meeting of the Department of Superintendence held in Richmond, Va., in February, 1894, the committee held two protracted sessions. At these sessions the plan of work for the ensuing year was discussed and determined. The chairman was authorized to divide the members of the committee into three sub-committees—one on the training of teachers, one on the correlation of studies in elementary education, and one on the organization of city school systems.

The sub-committees were appointed as follows :

The Training of Teachers.—Horace S. Tarbell (chairman), Edward Brooks, Thomas M. Balliet, Newton C. Dougherty, and Oscar H. Cooper.

The Correlation of Studies in Elementary Education.—William T. Harris (chairman), James M. Greenwood, Charles B. Gilbert, Lewis H. Jones, and William H. Maxwell.

The Organization of City School Systems.—Andrew S. Draper (chairman), Edwin P. Seaver, Albert G. Lane, Addison B. Poland, and W. B. Powell.

The committee next adopted the following lists of questions, which the members were directed to submit to all persons throughout the country whose opinions might be considered as of value :

TRAINING OF TEACHERS

1. What should be the lowest age at which a person should be permitted to undertake a course of professional work ?

2. What should be the requirements for scholarship to enter on such a course ?

(a) English—Grammar, Historical Grammar, Rhetoric, Literature.

(b) Mathematics—Arithmetic, Algebra, Geometry.

(c) Botany and Zoölogy.

(d) Drawing.

(e) Music.

(f) History.

(g) Geography.

(h) Physics.

(i) Chemistry.

(j) Foreign languages—French, German, Latin, Greek.

(k) Physiology and Hygiene.

(l) Mineralogy.

3. Should scholarships be determined by an examination, or should a high-school diploma be accepted as evidence ? If the latter, should a four years' course be required ?

4. What should be the duration of the training-school course ?

5. What proportion of this time should be devoted to studying principles and methods of education ? What proportion, to the practice of teaching ?

6. To what extent should psychology be studied, and in what way?

7. Along what lines should the observation of children be pursued?

8. What measurements of children should be made, and what apparatus should be required for the purpose?

9. In what way should principles of education be derived from psychology and allied sciences?

10. How far and in what way should the history of education be studied? In what way may the history of education be made of practical use to teachers?

11. In what way should the training in teaching the various subjects of the common-school curriculum be pursued?

(a) By writing outlines of lessons?

(b) By giving lessons to fellow pupil teachers?

(c) By the study of books or periodicals devoted to methods of teaching?

(d) By lectures?

12. In a model school, should there be a model-teacher placed over each class? Or, should there be a model-teacher placed over every two classes? Or, should the pupil-teachers be held responsible for the teaching of all classes, under the direction of a critic-teacher?

13. What is the most fruitful plan of observing the work of model-teachers?

14. What is the most fruitful plan of criticising the practice work of pupil-teachers?

15. Should the criticism be made by the teachers of methodology, or by critic-teachers appointed specially for the purpose, or by the model-teachers?

16. Should the imparting of knowledge, other than psychology, principles, methods, and history of education, form any part of the work of a normal or training school?

17. How should a pupil-teacher's efficiency be tested in a training school?

18. On what grounds should the diploma of a training school be issued?

CORRELATION OF STUDIES

1. Should the elementary course be eight years and the secondary course four years, as at present? Or, should the elementary course be six years and the secondary course six years?

2. Has each of the grammar school studies—language (including reading, spelling, grammar, composition), mathematics (arithmetic, algebra, plane geometry), geography, history, natural science (botany, zoölogy, mineralogy), penmanship, drawing, etc., a distinct pedagogical value? If so, what is it?

3. Should other subjects than those enumerated in the second question, such as manual training (including sloyd, sewing, and cooking), physical culture, physics, music, physiology (including the effects of stimulants and narcotics), Latin, or a modern language, be taught in the elementary school course? If so, why?

4. Should the sequence of topics be determined by the logical development of the subject, or by the child's power to apperceive new ideas? Or, to any extent by the evolutionary steps manifested by the race? If so, by the evolution of the race to which the child belongs, or that of the human race?

5. What should be the purpose of attempting a close correlation of studies?

(a) To prevent duplication, eliminate non-essentials, and save time and effort?

(b) To develop the apperceiving power of the mind?

(c) To develop character,—a purely ethical purpose?

6. Is it possible on any basis to correlate or unify all the studies of the elementary school?

7. If not, may they be divided into two or more groups, those of each group being correlated?

8. Is there any way of correlating the results of work in all the groups?

9. What should be the length of recitation periods in each year of the elementary school course? What considerations should determine the length?

10. In what year of the course should each of the subjects mentioned in questions 2 and 3 be introduced, if introduced at all?

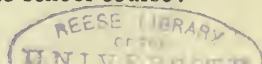
11. In making a programme, should time be assigned for each subject, or only for the groups of subjects suggested in question 7?

12. How many hours a week for how many years should be devoted to each subject, or each group of subjects?

13. What topics may be covered in each subject, or each group of subjects?

14. Should any subject, or group of subjects, be treated differently for pupils who leave school at twelve, thirteen, or fourteen years of age, and for those who are going to a high school?

15. Can any description be given of the best method of teaching each subject, or group of subjects, throughout the school course?



16. What considerations should determine the point at which the specialization of the work of teachers should begin?

17. On what principle should the promotion of pupils from grade to grade be determined? Who should make the determination?

CITY SCHOOL SYSTEMS

1. Should there be a board of education, or a commissioner with an advisory council?

2. If a commissioner, should he be elected by the people, or appointed by the mayor, or selected in some other way?

3. What should be his powers and duties?

4. If a board of education, of how many members should it consist?

5. Should the members be elected or appointed? From the city at large or to represent districts?

6. Should the members be elected in equal numbers from the two great political parties, or can any other device be suggested to eliminate politics from school administration?

7. By what authority should the superintendent of schools be elected or appointed? and for what term?

8. What should be the qualifications of a city superintendent of schools?

9. Should the city superintendent owe his appointment directly or indirectly to the State educational authorities, and be responsible to them rather than to the local authorities?

10. In whom should be vested the authority to license teachers? To cancel licenses for cause?

11. In whom should be vested the power to appoint teachers? In whom the power to discharge teachers?

12. Supposing teachers appointed to a school, who should have the power to assign them to grades or classes?

13. Should the principle of competitive examination be introduced in determining promotions to positions of greater responsibility or emolument?

14. How should the duties of superintendents on the one hand and of principals on the other, in the supervision of methods and of teaching, be defined?

15. By whom should the course of study be made?

16. By whom should text-books be selected?

17. By whom should promotions be made?

18. By whom should disputes between parents and the teaching force be settled?

19. By whom should a compulsory education law be enforced?

It was further decided that all papers written in answer to these lists of questions were to be placed in the hands of the chairmen of the sub-committees not later than November 1, 1894, and that the chairmen should prepare reports to be submitted to the full committee at a meeting to be held in December of that year.

The next meeting of the committee was held on July 9, 1894, at Asbury Park, N. J., during the session of the National Educational Association at that place. It was there determined that each of the sub-committee chairmen should present the report of his sub-committee to the Department of Superintendence at the meeting to be held in Cleveland, O., in February, 1895. Other details were arranged, and progress was reported in the matter of obtaining opinions from the experts invited to answer the questions formulated by the committee.

On the 10th of December, 1894, the committee met in Washington, D. C. It continued in session four days, holding three sessions each day. During a small fraction of this time the sub-committees met separately; but for the most part the subject matter of each report was discussed by the full committee. All the members were present except Superintendent Powell, who was unfortunately absent through severe illness.

President Draper presented a preliminary report on the organization of city school systems, and Superintendent Tarbell one on the training of teachers. Superintendent Tarbell's report was adopted by the full committee without a dissenting voice. President Draper's report also received the unanimous approval of the committee, except in so far as it recommended the establishment of the office of School Director. Seven votes were recorded in favor of that recommendation. No votes were recorded against it, though several members refrained from voting. Subsequently, when the report was submitted in its final shape, eleven

members signified their approval of the entire report, and signed it.

With regard to the correlation of studies, important differences of opinion were developed in the consideration of the various propositions submitted by Dr. Harris and by other members of the committee. About two-thirds of the time the committee was in session was devoted to the discussion of these propositions. While an adequate conception of the intensity of this discussion cannot now be conveyed to any one who was not present, a brief *résumé* of the leading propositions presented will give some idea of its scope.

The following propositions were unanimously adopted by the full committee :

1. The civilization of the age—the environment into which the child is born—should determine the selection of the objects of study, to the end that the child may gain an insight into the world in which he lives, and a command over its resources such as is obtained by a helpful coöperation with his fellows.
2. Psychology should determine the selection and arrangement of the topics within each branch, so as to afford the best exercise of the faculties of the mind, and to secure the unfolding of those faculties in their natural order.
3. Language, as a subject of study, has a distinct and definite relation to the introduction of the child into the civilization of his time, and has, therefore, a distinct pedagogical value, forming the true basis of correlating the elementary studies.

In correlating geography and history, the former should be subordinate to the latter.

4. Instruction in the elements of physics and chemistry, in so far as they are to be taught at all in the elementary school, should not be limited to the higher grades, but should be given in all grades in connection with topics in physiology and physical geography.

5. Elementary geography should not be taught as a special study, but the topics usually included under this caption in

the course of study should be incorporated into the course of form and nature study.

- 6 The use of good English, including the correct use of technical terms, should be required in all studies; all use of bad English, caused by, or significant of, confusion of thought, should be corrected by securing the elucidation of the thought; the child's best efforts in speech should be required in all recitations, oral or written; but solecisms should for the most part be corrected in the regular language lessons.
- 7 The study of English grammar should be made subordinate and auxiliary to the study of English literature.
- 8 Writing, as a special branch, should be taught only through the sixth year of the course.
- 9 Manual training in wood and metals should be made a part of the course for boys during the seventh and eighth years; and sewing and cooking should be taught to girls—the former in the fourth, fifth, and sixth years, the latter in the seventh and eighth years.
- 10 Music should be taught throughout the elementary course, and the sight reading of music should have a prominent place in the study.

With regard to the following propositions, serious differences of opinion arose:

Algebra should take the place of arithmetic in the eighth year of the elementary course. Rejected.

Algebra (not to the exclusion of arithmetic) should be taught during one-half of the last year of the course. Adopted by a majority.

Latin should be studied during the eighth year instead of English grammar; and English grammar should be studied during the sixth and seventh years. Adopted by a majority.

In the eighth year, an option should be given between Latin and a modern language. Rejected.

United States history should be taken up during the eighth

year, and should be studied only up to the date of the adoption of the Constitution. Rejected.

United States history should be studied for one and a half years. Adopted by a majority.

The Constitution of the United States should be studied for ten weeks during the last year of the course. Adopted by a majority.

If the community is at one on the course of study, all pupils should take the same branches of study, without any omission. Adopted by a majority.

The course of study for elementary schools should admit optional studies on educational grounds for the good of the pupil. Rejected.

Reading should be both silent and oral. There should be at least four lines of connected reading, embracing literature, history, geography, and nature studies. Furthermore, prose and poetry, of an appropriate character, should be read to the classes throughout the grades in which pupils are too young to read such literature themselves. Adopted by a majority.

Concrete geometry should be taught under the head of drawing, and also under the head of mensuration in arithmetic. Rejected.

During an eight-year course (beginning with the sixth year of age) the following subjects should be required from all pupils: English, mathematics, United States history and Constitution, drawing, and music. Not more than one of the following subjects should be pursued, in addition to those enumerated above: Latin, a modern language, natural science, manual training, or concrete geometry. Rejected.

Not more than sixty minutes of outside study should be required of any elementary school pupil. Adopted by a majority.

The propositions stated above were discussed at great length; and Dr. Harris was requested, in drawing up his report, to give expression to the views of the majority of the

committee as gathered from these discussions, to discuss educational values, to elucidate various phases of correlation, and to arrange a tabular view of the elementary course of study showing the location of each subject and the time to be devoted to it.

The final meeting of the committee was held in Cleveland, O., on February 18, 1895, when the reports of the sub-committees were adopted by the Committee of Fifteen.

With regard to the presentation of the reports to the Department of Superintendence, and with regard to its publication, the committee, having no publication fund at its disposal, and wishing to spread the report before the public at once, at its Washington meeting adopted the following:

Resolved, That the reports of the three sub-committees be read by their respective chairmen before the Department of Superintendence at Cleveland, in February, 1895, and published in the *Educational Review* for March, 1895 ; provided that the publishers of the *Review* agree to furnish to each member of the Committee of Fifteen, and also to each person appointed to discuss the report before the Cleveland meeting, a printed copy of the report ; and immediately after the meeting to send to each educational journal desiring it such a printed copy, with the request that it be published in as nearly complete a form as possible.

The terms of this resolution were conveyed to the editor and publishers of the *Educational Review*, and were accepted by them. The reports were read by the three chairmen of sub-committees before the Department of Superintendence at Cleveland on February 19, 20, and 21, 1895. The reports were printed in the March issue of the *Educational Review*. Printed copies were furnished to the members of the Committee of Fifteen and to the gentlemen appointed to discuss the report. A copy was sent to every educational journal desiring it, and also to every member of the Department who responded to the public invitation to furnish his name and address for the purpose.

As soon as the reports were presented to the Department, they became the property of the National Educational Association.

The following resolution was adopted by the Department of Superintendence on February 21 :

Resolved, That we recognize the great value of the report of the Committee of Fifteen in setting forth standards, defining educational values, and furnishing broad grounds for intelligent deliberation and discussion in the future ; and that the committee be, and hereby are, authorized to put the report and such dissenting opinions as they may see fit to use into form satisfactory to themselves, and to print the same ; and that the committee having performed this duty be discharged.

Upon the same subject the Committee of Fifteen, at its meeting in Washington, on December 11, 1894, adopted the following resolution :

Resolved, That the chairmen of the sub-committees, acting in conjunction with the chairman of the Committee of Fifteen, are hereby authorized to publish such papers as are deemed necessary, as appendices to the general report of the Committee of Fifteen.

It is in accordance with these two resolutions that the present edition is prepared. In addition to this historical statement, and to the original reports of the three sub-committees, it contains, as appendices, such papers and parts of papers, submitted to the sub-committees, as were selected for publication.

It is found impossible to print all the papers submitted to the committee. In making selections, the design has been, as far as practicable, to eliminate repetitions and to preserve all valuable ideas.

WILLIAM H. MAXWELL, *Chairman*.

BROOKLYN, N. Y., *March 23, 1895.*

I

REPORT OF THE

SUB-COMMITTEE ON THE TRAINING OF TEACHERS

This report treats of the training of elementary and secondary teachers, considering first that training which should precede teaching in elementary schools. By elementary schools are meant the primary and grammar departments of graded schools, and ungraded or rural schools.

5

That teachers are "born, not made," has been so fully the world's thought until the present century that a study of subjects without any study of principles or methods of teaching has been deemed quite sufficient. Modern educational thought and modern practice, in all sections where excellent schools are found, confirm the belief that there is a profound philosophy on which educational methods are based, and that careful study of this philosophy and its application under expert guidance are essential to making fit the man born to teach.

CONDITIONS FOR PROFESSIONAL TRAINING—AGE AND ATTAINMENTS

It is a widely prevalent doctrine, to which the customs of our best schools conform, that teachers of elementary schools should have a secondary or high-school education, and that teachers of high schools should have a collegiate education. Your committee believe that these are the minimum acquirements that can generally be accepted, that the scholarship, culture, and power gained by four years of study in advance of

the pupils are not too much to be rightfully demanded, and that as a rule no one ought to become a teacher who has not the age and attainments presupposed in the possessor of a high-school diploma. There are differences in high schools, it is true, and a high school diploma is not a fixed standard of attainment; but in these United States it is one of the most definite and uniform standards that we possess, and varies less than college degrees vary or than elementary schools and local standards of culture vary.

10 It is of course implied in the foregoing remarks that the high-school from which the candidate comes is known to be a reputable school, and that its diploma is proof of the completion of a good four-years' course in a creditable manner. If these conditions do not exist, careful examination is the only recourse.

15 If this condition, high-school graduation or proof by examination of equivalent scholarship, be accepted, the questions of the age and attainment to be reached before entering upon professional study and training are already settled. But if a more definite statement be desired, then it may be said that
20 the candidate for admission to a normal or training school should be eighteen years of age and should have studied English, mathematics, and science to the extent usually pursued in high schools, should be able to write readily, correctly, and methodically upon topics within the teacher's necessary
25 range of thought and conversation, and should have studied, for two or more years, at least one language beside English. Skill in music and drawing is desirable, particularly ability to sketch readily and effectively.

TRAINING SCHOOLS

The training of teachers may be done in normal schools,
30 normal classes in academies and high schools, and in city training schools. To all these the general term "training schools" will be applied. Those instructed in these schools will be called pupils while engaged in professional study, and pupil-teachers or teachers-in-training while in practice-teaching pre-
35 paratory to graduation. Teachers whose work is to be observed

by pupil-teachers will be called model-teachers; teachers in charge of pupil-teachers during their practice work will be called critic-teachers. In some institutions model-teachers and critic-teachers are the same persons. The studies usually pursued in academies and high schools will be termed 5 academic, and those post-academic studies to be pursued before or during practice-teaching as a preparation therefor will be termed professional.

ACADEMIC STUDIES

Whether academic studies have any legitimate place in a normal or training school is a question much debated. It can- 10 not be supposed that your committee can settle in a paragraph a question upon which many essays have been written, many speeches delivered, and over which much controversy has been waged.

If training schools are to be distinguished from other sec- 15 ondary schools they must do a work not done in other schools. So far as they teach common branches of study they are doing what other schools are doing, and have small excuse for existence; but it may be granted that methods can practically be taught only as to subjects, that the study done in professional 20 schools may so treat of the subjects of study, not as objects to be acquired, but as objects to be presented, that their treatment shall be wholly professional.

One who is to teach a subject needs to know it as a whole made up of related and subordinate parts, and hence must 25 study it by a method that will give this knowledge. It is not necessary to press the argument that many pupils enter normal and training schools with such slight preparation as to require instruction in academic subjects. The college with a preparatory department is, as a rule, an institution of distinctly lower 30 grade than one without such a department. Academic work in normal schools that is of the nature of preparation for professional work, lowers the standard and perhaps the usefulness of such a school; but academic work done as a means of illustrating or enforcing professional truth has its place in a 35

professional school as in effect a part of the professional work. Professional study differs widely from academic study. In the one, a science is studied in its relation to the studying mind ; in the other, in reference to its principles and applications. The aim of one kind of study is power to apply ; of the other, power to present. The tendency of the one is to bring the learner into sympathy with the natural world, of the other with the child world. How much broader becomes the teacher who takes both the academic and the professional view ! He who learns that he may know and he who learns that he may teach are standing in quite different mental attitudes. One works for knowledge of subject-matter ; the other that his knowledge may have due organization, that he may bring to consciousness the apperceiving ideas by means of which matter and method may be suitably conjoined.

How to study is knowledge indispensable to knowing how to teach. The method of teaching can best be illustrated by teaching. The attitude of a pupil in a training school must be that of a learner whose mental stores are expanding, who faces the great world of knowledge with the purpose to survey a portion of it. If we insist upon a sufficient preparation for admission, the question of what studies to pursue and especially the controversy between professional and academic work will be mainly settled.

PROFESSIONAL WORK

Professional training comprises two parts : (a) The science of teaching, and (b) the art of teaching.

In the *science of teaching* are included : (1) Psychology as a basis for principles and methods ; (2) Methodology as a guide to instruction ; (3) School economy, which adjusts the conditions of work ; and (4) History of education, which gives breadth of view.

The *art of teaching* is best gained : (1) by observation of good teaching ; (2) by practice-teaching under criticism.

RELATIVE TIME

The existence and importance of each of these elements in

the training of teachers are generally acknowledged. Their order and proportionate treatment give rise to differences of opinion. Some would omit the practice work entirely, launching the young teacher upon independent work directly from her pupilage in theory. Others, and much the greater number, 5 advise some preparation in the form of guided experience before the training be considered complete. These vary greatly in their estimate of the proportionate time to be given to practice during training. The answers to the question, "What proportion?" which your committee has received, range from 10 one-sixteenth to two-thirds as the proportion of time to be given to practice. The greater number, however, advocate a division of time about equal between theory and practice.

The normal schools incline to the smallest proportion for practice-teaching, the city training-schools to the largest. It 15 should be borne in mind, however, that city training-schools are a close continuation, usually, of high schools, and that the high-school courses give a more uniform and probably a more adequate preparation than the students entering normal schools have usually had. Their facilities for practice-teaching are much 20 greater than normal schools can secure, and for this reason also practice is made relatively more important. As to the relative merits of city training-schools and normal schools, your committee does not desire to express an opinion; the conditions of education demand the existence of both, and both are necessities 25 of educational advancement. It is important to add, however, that in the judgment of your committee not less than half of the time spent under training by the apprentice-teacher should be given to observation and practice, and that this practice in its conditions should be as similar as possible to the work she 30 will later be required to do independently.

SCIENCE OF TEACHING—PSYCHOLOGY

The laws of apperception teach that one is ready to apprehend new truth most readily when he has already established a considerable and well-arranged body of ideas thereon.

Suggestion, observation, and reflection are each most fruit-35

ful when a foundation of antecedent knowledge has been provided. Hence your committee recommends that early in their course of study teachers in training assume as true the well-known facts of psychology and the essential principles of education, and make their later study and practice in the light of these principles. These principles thus become the norm of educational thought, and their truth is continually demonstrated by subsequent experience. From this time theory and practice should proceed together in mutual aid and support.

Most fundamental and important of the professional studies which ought to be pursued by one intending to teach is psychology. This study should be pursued at two periods of the training-school course, the beginning and the end, and its principles should be appealed to daily when not formally studied. The method of study should be both deductive and inductive. The terminology should be early learned from a suitable text-book, and significance given to the terms by introspection, observation, and analysis. Power of introspection should be gained, guidance in observation should be given, and confirmation of psychological principles should be sought on every hand. The habit of thinking analytically and psychologically should be formed by every teacher. At the close of the course a more profound and more completely inductive study of physiological psychology should be made. In this way, a tendency to investigate should be encouraged or created.

STUDY OF CHILDREN

Modern educational thought emphasizes the opinion that the child, not the subject of study, is the guide to the teacher's efforts. To know the child is of paramount importance. How to know the child must be an important item of instruction to the teacher in training. The child must be studied as to his physical, mental, and moral condition. Is he in good health? Are his senses of sight and hearing normal, or in what degree abnormal? What is his temperament? Which of his faculties

seem weak or dormant? Is he eye-minded or ear-minded? What are his powers of attention? What are his likes and dislikes? How far is his moral nature developed, and what are its tendencies? By what tests can the degree of difference between bright and dull children be estimated? 5

To study effectively and observingly these and similar questions respecting children, is a high art. No common-sense power of discerning human nature is sufficient; though common sense and sympathy go a long way in such study. Weighing, measuring, elaborate investigation requiring appa-10 ratus and laboratory methods, are for experts, not teachers in training. Above all, it must ever be remembered that the child is to be studied as a personality and not as an object to be weighed or analyzed.

METHODOLOGY

A part of the work under this head must be a study of the 15 mental and moral effects of different methods of teaching and examination, the relative value of individual and class instruction at different periods of school life and in the study of different branches. The art of questioning is to be studied in its foundation principles and by the illustration of the best 20 examples. Some review of the branches which are to be taught may be made, making the teacher's knowledge of them ready and distinct as to the relations of the several parts of the subject to one another and of the whole to kindred subjects. These and many such subjects should be discussed in the class 25 in pedagogy, investigation should be begun, and the lines on which it can be followed should be distinctly laid down.

The laws of psychology, or the capabilities and methods of mind-activity, are themselves the fundamental laws of teaching, which is the act of exciting normal and profitable mind-30 action. Beyond these fundamental laws, the principles of education are to be derived inductively. These inductions when brought to test will be found to be rational inferences from psychological laws and thus founded upon and explained by them.

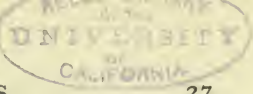
SCHOOL ECONOMY

School economy, though a factor of great importance in the teacher's training, can be best studied by the teacher of some maturity and experience, and is of more value in the equipment of secondary than of elementary teachers. Only its outlines and fundamental principles should be studied in the ordinary training-school.

HISTORY OF EDUCATION

Breadth of mind consists in the power to view facts and opinions from the standpoints of others. It is this truth which makes the study of history in a full, appreciative way so influential in giving mental breadth. This general advantage the history of education has in still larger degree, because our interest in the views and experiences of those engaged like us in training the young, enables us to enter more fully into their thoughts and purposes than we could into those of the warrior or ruler. From the efforts of the man we imagine his surroundings, which we contrast with our own. To the abstract element of theoretical truth is added the warm human interest we feel in the hero, the generous partisan of truth. The history of education is particularly full of examples of noble purpose, advanced thought, and moral heroism. It is inspiring to fill our minds with these human ideals. We read in the success of the unpractical Pestalozzi the award made to self-sacrifice, sympathy, and enthusiasm expended in giving application to a vital truth.

But with enthusiasm for ideals history gives us caution, warns us against the moving of the pendulum, and gives us points of departure from which to measure progress. It gives us courage to attack difficult problems. It shows which the abiding problems are—those that can be solved only by waiting, and not tossed aside by a supreme effort. It shows us the progress of the race, the changing ideals of the perfect man, and the means by which men have sought to realize these ideals. We can from its study better answer the question, What is education, what may it accomplish, and how may its



ideals be realized? It gives the evolution of the present and explains anomalies in our work. And yet the history of education is not a subject to be treated extensively in a training school. All but the outlines may better be reserved for later professional reading.

5'

TRAINING IN TEACHING

Training to teach requires (1) schools for observation, and (2) schools for practice.

Of necessity, these schools must be separate in purpose and in organization. A practice school cannot be a model school. The pupil-teachers should have the opportunity to observe the 10 best models of the teaching art; and the manner, methods, and devices of the model-teacher should be noted, discussed, and referred to the foundation principles on which they rest. Allowable modifications of this observed work may be suggested by the pupil-teacher and approved by the teacher in 15 charge.

There should be selected certain of the best teachers in regular school work whom the pupil-teachers may be sent to observe. The pupil-teachers should take no part in the school work nor cause any change therein. They should, however, 20 be told in advance by the teacher what purpose she seeks to accomplish. This excites expectation and brings into consciousness the apperceiving ideas by which the suggestions of the exercise, as they develop, may be seized and assimilated.

At first these visits should be made in company with their 25 teacher of methods, and the work of a single class in one subject should be first observed. After such visits the teacher of methods in the given subject should discuss with the pupil-teachers the work observed. The pupil-teachers should first describe the work they have seen and specify the excellences 30 noted, and tell why these things are commendable and upon what laws of teaching they are based. Next the pupil-teachers should question the teacher of methods as to the cause, purpose, or influence of things noted, and matters of doubtful propriety—if there be such—should be considered. Then 35

the teacher in turn should question her pupil-teachers as to matters that seem to have escaped their notice, as to the motive of the model-teacher, as to the reason for the order of treatment, or form of question, wherein lay the merit of her method, the secret of her power. When pupil-teachers have made such observations several times, with several teachers and in several subjects, the broader investigation may be made as to the organization of one of the model rooms, its daily programme of recitations and of study, the methods of discipline, the relations between pupils and teacher, the "school spirit," the school movements, and class progress. This work should be done before teaching groups or classes of pupils is attempted, and should form an occasional exercise during the period of practice-teaching as a matter of relief and inspiration. If an artist requires the suggestive help of a good example that stirs his own originality, why should not a teacher?

THE PRACTICE-SCHOOL

During the course in methodology certain steps closely preparatory to practice-teaching may be taken. 1. The pupil-teacher may analyze the topic to be taught, noting essentials and incidentals, seeking the connections of the subject with the mental possessions of the pupils to be considered and the sequences from these points of contact to the knowledge to be gained under instruction. 2. Next, plans of lessons may be prepared and series of questions for teaching the given subject. 3. Giving lessons to fellow pupil-teachers leads to familiarity with the mechanism of class work, such as calling, directing, and dismissing classes, gives the beginner ease and self-confidence, leads to careful preparation of lessons, gives skill in asking questions and in the use of apparatus. The practice-teaching should be in another school, preferably in a different building, and should commence with group-teaching in a recitation room apart from the schoolroom. Actual teaching of small groups of children gives opportunity for the study of the child-mind in its efforts at reception and assimilation of new ideas, and shows the modifications in lesson

plans that must be made to adapt the subject matter to the child's tastes and activities. But the independent charge for a considerable time of a schoolroom with a full quota of pupils, the pupil-teacher and the children being much of the time the sole occupants of the room—in short, the realization of ordinary school conditions, with the opportunity to go for advice to a friendly critic, is the most valuable practice; and no practice short of this can be considered of great value except as preparation for this chief form of preparatory practice. All this work should have its due proportion only, or evil may result. For example, lesson plans tend to formalism, to self-conceit, to work in few and narrow lines, to study of subjects rather than of pupils; lessons to fellow-pupils make one self-conscious, hinder the growth of enthusiasm in work, and are entirely barren if carried beyond a very few exercises; teaching groups of children for considerable time unfits the teacher for the double burden of discipline and instruction; to bear both of which simultaneously and easily is the teacher's greatest difficulty and most essential power.

A critic-teacher should be appointed to the oversight of two such pupil-teachers, each in charge of a schoolroom. The critic may also supervise one or more teachers practicing for brief periods daily with groups of children.

The pupil-teachers are now to emphasize practice rather than theory, to work under the direction of one who regards the interests of the children quite as much as those of the teacher-in-training. The critic must admit the principles of education and general methods taught by the teacher of methodology, but she may have her own devices and even special methods that need not be those of the teacher of methodology. No harm will come to the teachers-in-training if they learn that principles must be assented to by all, but that methods may bear the stamp of the personality of the teacher; that all things must be considered from the point of view of their effect upon the pupils; the critic maintaining the claims of the children, the teacher of methods conforming to the laws of mind and the science of the subjects taught. The

critics must teach for their pupil-teachers and show in action the justness of their suggestions. In this sense they are model-teachers as well as critics.

The critic should at the close of school meet her pupil-
5 teachers for a report of their experiences through the day: What they have attempted, how they have tried to do it, why they did so, and what success they gained. Advice as to overcoming difficulties, encouragement under trial, caution if need be, help for the work of to-morrow, occupy the hour.
10 Above all, the critic should be a true friend, a womanly and cultivated woman, and an inspiring companion, whose presence is helpful to work and improving to personality.

LENGTH OF TRAINING-SCHOOL COURSE

There are three elements which determine the time to be spent in a training school—the time given to academic studies,
15 the time given to professional studies, and the time given to practice. The sum of these periods will be the time required for the training course. Taking these in the inverse order, let us consider how much time is required for practice work with pupils. The time given to lesson outlines and practice with
20 fellow pupil-teachers may be considered a part of the professional study rather than of practice-teaching. The period of practice with pupils must not be too short, whether we consider the interests of the pupils or of the teachers-in-training. An effort is usually made to counteract the effect upon the
25 children of a succession of crude efforts of teachers beginning practice by strengthening the teaching and supervision through the employment of a considerable number of model and supervisory teachers, and by dividing the pupils into small groups so that much individual work can be done. These arrange-
30 ments, while useful for their purpose, destroy to a considerable degree the usual conditions under which school work is to be done and tend to render the teachers-in-training formal and imitative.

The practice room should be, as far as may be, the ordinary
35 school, with the difficulties and responsibilities that will be met

later. The responsibility for order, discipline, progress, records, reports, communication with parents and school authorities, must fall fully upon the young teacher, who has a friendly assistant to whom she can go for advice in the person of a wise and experienced critic, not constantly at hand, but constantly 5 within reach.

Between the critic and the teacher-in-training there should exist the most cordial and familiar relations. These relations are based on the one hand upon an appreciation of wisdom and kindness, on the other, upon an appreciation of sincerity and 10 effort. The growth of such relations, and the fruitage which follows their growth, require time. A half-year is not too long to be allotted for them. During this half-year experience, self-confidence and growth in power have been gained; but the pupil-teacher is still not ready to be set aside to work out her 15 own destiny. At this point she is just ready for marked advance, which should be helped and guided. To remain longer with her critic friend may cause imitation rather than independence, may lead to contentment and cessation of growth. She should now be transferred to the care of a second critic of 20 a different personality, but of equal merit. The new critic is bound by her duty and her ambition to see that the first half year's advancement is maintained in the second. The pupil-teacher finds that excellence is not all upon one model. The value of individuality impresses her. She gains a view of solid 25 principles wrapped in diverse characteristics. Her own individuality rises to new importance, and the elements of a growth not at once to be checked start up within her. For the care of the second critic a second half year must be allowed, which extends the practice work with pupils through an entire 30 school year. For the theoretical work a year is by general experience proven sufficient. The ideal training course is, then, one of two years' length.

Provision for the extended practice which is here recommended can be made only by city training-schools and by 35 normal schools having connection with the schools of a city. To set apart a building of several rooms as a school of practice

will answer the purpose only when there are very few teachers in training. In order to give each pupil-teacher a year of practice the number of practice rooms must equal the number of teachers to be graduated annually from the training school, 5 be the number ten, or fifty, or five hundred. In any considerable city a school for practice will not suffice; many schools for practice must be secured. This can be done by selecting one excellent teacher in each of a sufficient number of school buildings, and making her a critic-teacher, giving her 10 charge of two schoolrooms, in each of which is placed a pupil-teacher for training.

This insures that the teaching shall be done as nearly as may be under ordinary conditions, brings the pupil-teachers at once into the general body of teachers, makes the corps of 15 critics a leaven of zeal, and good teaching scattered among the schools. This body of critics will uplift the schools. More capable in the beginning than the average teacher, led to professional study, ambitious for the best things, they make greater progress than they otherwise would do, and are suffi- 20 cient in themselves to inspire the general body of teachers. For the sake of the pupil-teachers, and the children, too, this plan is best. Its economy also will readily be apparent. This plan has been tried for several years in the schools of Providence, with results fully equal to those herein claimed.

TESTS OF SUCCESS

25 The tests of success in practice-teaching are in the main those to be applied to all teaching. Do her pupils grow more honest, industrious, polite? Do they admire their teacher? Does she secure obedience and industry only while demanding it, or has she influence that reaches beyond her presence? Do 30 her pupils think well and talk well? As to the teacher herself: Has she sympathy and tact, self-reliance and originality, breadth and intensity? Is she systematic, direct, and business-like? Is she courteous, neat in person and in work? Has she discernment of character and a just standard of requirement 35 and attainment?

These are some of the questions one must answer before he pronounces any teacher a success or a failure.

Admission to a training school assumes that the pupil has good health, good scholarship, good sense, good ability, and devotion to the work of teaching. If all these continue to be exhibited in satisfactory degree and the pupil goes through the prescribed course of study and practice, the diploma of the school should naturally mark the completion of this work. If it appears on acquaintance that a serious mistake has been made in estimating any of these elements, then, so soon as the mistake is fairly apparent and is probably a permanent condition, the pupil should be requested to withdraw from the work. This is not a case where the wheat and the tares should grow together until the harvest at graduation day or the examination preceding it. With such a foundation continually maintained, it is the duty of the school to conquer success for each pupil.

Teaching does not require genius. Indeed genius, in the sense of erratic ability, is out of place in the teacher's chair. Most good teachers at this close of the nineteenth century are made, not born; made from good material well fashioned. There is, however, a possibility that some idiosyncrasy of character, not readily discovered until the test is made, may rise between the prospective teacher and her pupils, making her influence over them small or harmful. Such a defect, if it exist, will appear during the practice-teaching, and the critic will discover it. This defect, on its first discovery, should be plainly pointed out to the teacher-in-training and her efforts should be joined with those of the critic in its removal.

If this effort be a failure and the defect be one likely to harm the pupils hereafter to be taught, then the teacher-in-training should be informed and requested to withdraw from the school. There should be no test at the close of the school course to determine fitness for graduation. Graduation should find the teacher serious in view of her responsibilities, hopeful because she has learned how success is to be attained, inspired with the belief that growth in herself and in her pupils is the great demand and the great reward.

TRAINING OF TEACHERS FOR SECONDARY SCHOOLS

Perhaps one-sixth of the great body of public school teachers in the United States are engaged in secondary work and in supervision. These are the leading teachers. They give educational tone to communities, as well as inspiration to
5 the body of teachers.

It is of great importance that they be imbued with the professional spirit springing from sound professional culture. The very difficult and responsible positions that they fill demand ripe scholarship, more than ordinary ability, and an intimate
10 knowledge of the period of adolescence, which Rousseau so aptly styles the second birth.

The elementary schools provide for the education of the masses. Our secondary schools educate our social and business leaders. The careers of our college graduates who mainly
15 fill the important places in professional and political life are determined largely by the years of secondary training. The college or university gives expansion and finish, the secondary school gives character and direction.

It should not be forgotten that the superintendents of public
20 schools are largely taken from the ranks of secondary teachers, and that the scholarship, qualities, and training required for the one class are nearly equivalent to that demanded for the other.

Our high schools, too, are the source of supply for teachers
25 in elementary schools. Hence the pedagogic influences exerted in the high school should lead to excellence in elementary teaching.

The superintendent who with long foresight looks to the improvement of his schools will labor earnestly to improve
30 and especially to professionalize the teaching in his high school. The management which makes the high school an independent portion of the school system, merely attached and loftily superior, which limits the supervision and influence of the superintendent to the primary and grammar grades, is
35 short-sighted and destructive.

There ought also to be a place and a plan for the training of teachers for normal schools. The great body of normal and training schools in the United States are secondary schools. Those who are to teach in these schools need broad scholarship, thorough understanding of educational problems, 5 and trained experience. To put into these schools teachers whose scholarship is that of the secondary school and whose training is that of the elementary is to narrow and depress rather than broaden and elevate.

If college graduates are put directly into teaching without 10 special study and training, they will teach as they have been taught. The methods of college professors are not in all cases the best, and, if they were, high school pupils are not to be taught nor disciplined as college students are. High school teaching and discipline can be that of neither of the grammar 15 school nor of the college, but is *sui generis*. To recognize this truth and the special differences is vital to success. This recognition comes only from much experience at great loss and partial failure, or by happy intuition not usually to be expected, or by definite instruction and directed practice. 20 Success in teaching depends upon conformity to principles, and these principles are not a part of the mental equipment of every educated person.

These considerations and others are the occasion of a growing conviction, widespread in this land, that secondary teachers 25 should be trained for their work even more carefully than elementary teachers are trained. This conviction is manifested in the efforts to secure normal schools adapted to training teachers for secondary schools, notably in Massachusetts and New York, and in the numerous professorships of pedagogy 30 established in rapidly increasing numbers in our colleges and universities.

The training of teachers for secondary schools is in several essential respects the same as that for teachers of elementary schools. Both demand scholarship, theory, and practice. The 35 degree of scholarship required for secondary teachers is by common consent fixed at a collegiate education. No one—

with rare exceptions—should be employed to teach in a high school who has not this fundamental preparation.

It is not necessary to enter in detail into the work of theoretical instruction for secondary teachers. The able men at the head of institutions and departments designed for such work neither need nor desire advice upon this matter. And yet for the purposes of this report it may be allowable to point out a plan for the organization of a secondary training school.

Let it be supposed that two essentials have been found in one locality, (1) a college or university having a department of pedagogy and a department of post-graduate work; (2) a high school, academy, or preparatory school whose managers are willing to employ and pay a number of graduate students to teach under direction for a portion of each day. These two conditions being met, we will suppose that pedagogy is offered as an elective to the college seniors.

Two years of instruction in the science and art of teaching are to be provided; one, mostly theory with some practice, elective during the senior year; the other, mostly practice with some theory, elective for one year as post-graduate work.

During the senior year is to be studied:

THE SCIENCE OF TEACHING

The elements of this science are:

I. Psychology in its physiological, apperceptive, and experimental features. The period of adolescence here assumes the prominence that childhood has in the psychological study preparatory to teaching in lower schools. This is the period of beginnings, the beginning of a more ambitious and generous life, a life having the future wrapped up in it; a transition period, of mental storm and stress, in which egoism gives way to altruism, romance has charm, and the social, moral, and religious feelings bud and bloom. To guide youth at this formative stage, in which an active fermentation occurs that may give wine or vinegar according to conditions, requires a deep and sympathetic nature, and that knowledge of the changing life which supplies guidance wise and adequate.

II. Methodology: a discussion of the principles of education and of the methods of teaching the studies of the secondary schools.

III. School Economy should be studied in a much wider and more thorough way than is required for elementary teachers. The school systems of Germany, France, England, and the leading systems of the United States should also be studied.

IV. History of education, the tracing of modern doctrine back to its sources; those streams of influence now flowing and those that have disappeared in the sands of the centuries.

V. The philosophy of education as a division of an all-involving philosophy of life and thought in which unity is found.

THE ART OF TEACHING

This includes observation and practice. The observation should include the work of different grades and of different localities, with minute and searching comparison and reports upon special topics. How does excellent primary work differ from excellent grammar-grade work? How do the standards of excellence differ between grammar grades and high-school grades? between high-school and college work? What are the arguments for and against coeducation in secondary schools as determined by experience? What are the upper and lower limits of secondary education as determined by the nature of the pupil's effort?

25

In the college class in pedagogy much more than in the elementary normal school can the class itself be made to afford a means of practice to its members. Quizzes may be conducted by students upon the chapters of the books read or the lectures of the professors. These exercises may have for their object review, or improved statement, or enlarged inference and application, and they afford an ample opportunity to cultivate the art of questioning, skill in which is the teacher's most essential accomplishment.

The head of the department of pedagogy will of course

35

present the essential methods of teaching, and the heads of other departments may lecture on methods pertaining to their subject of study ; or secondary teachers of known success may still better present the methods now approved in the several 5 departments of secondary work.

POST-GRADUATE YEAR

To those graduates who have elected pedagogy in their senior year may be offered the opportunity of further study in this department, with such other post-graduate work as taste and opportunity permit. From those selecting advanced 10 work in pedagogy the board in charge of the affiliated secondary school should elect as many teachers for its school as are needed, employing them for two-thirds time at one-half the usual pay for teachers without experience. Under the professor of pedagogy of the college, the principal, and the heads 15 of departments of the school these student-teachers should do their work, receiving advice, criticism, and illustration as occasion requires. The time for which they are employed would provide for two hours of class work and about one hour of clerical work or study while in charge of a schoolroom. These 20 student-teachers should be given abundant opportunity for the charge of pupils while reciting or studying, at recess and dismissals, and should have all the responsibilities of members of the faculty of this school. Their work should be inspected as frequently as may be by the heads of the departments in 25 which they teach, by the principal of the school, and by the professor of pedagogy. These appointments would be virtually fellowships with an opportunity for most profitable experience.

In the afternoon of each day these students should attend to college work and especially to instruction from the professor 30 in pedagogy, who could meet them occasionally with the heads of the departments under whose direction they are working.

On Saturdays a seminary of two hours' duration might be held, conducted by the professor of pedagogy and attended by the 35 student-teachers and the more ambitious teachers of experi-

ence in the vicinity. These seminaries would doubtless be of great profit to both classes of participants and the greater to each because of the other. [Such a training school for secondary teachers in connection with Brown University and the Providence High School is contemplated for the coming year.] 5

It will not be needful to specify further the advantages to the student-teachers. The arrangement likewise affords advantage to the affiliated school, especially in the breadth of view this work would afford to the heads of departments, the intense desire it would beget in them for professional skill, the 10 number of perplexing problems which it would force them to attempt the solution of.

The visits of the professor of pedagogy, and the constant comparison he would make between actual and ideal conditions, would lead him to seek the improvement not only of the stu-15 dents in practice but of the school as a whole.

When several earnest and capable people unite in a mutual effort to improve themselves and their work all the essential conditions of progress are present.

- HORACE S. TARBELL, *Chairman*, 20
Superintendent of Schools, Providence, R. I.
EDWARD BROOKS,
Superintendent of Schools, Philadelphia, Pa.
THOMAS M. BALLIET,
Superintendent of Schools, Springfield, Mass. 25
NEWTON C. DOUGHERTY,
Superintendent of Schools, Peoria, Ill.
OSCAR H. COOPER,
Superintendent of Schools, Galveston, Tex.

II

REPORT OF THE

✓ SUB-COMMITTEE ON THE CORRELATION OF STUDIES IN ELEMENTARY EDUCATION

The undersigned Committee agrees upon the following report, each member reserving for himself the expression of his individual divergence from the opinion of the majority, by a statement appended to his signature, enumerating the 5 points to which exception is taken and the grounds for them.

I. CORRELATION OF STUDIES

Your Committee understands by correlation of studies:

1. Logical order of topics and branches

First, the arrangement of topics in proper sequence in the course of study, in such a manner that each branch develops in an order suited to the natural and easy progress of the child, 10 and so that each step is taken at the proper time to help his advance to the next step in the same branch, or to the next steps in other related branches of the course of study.

2. Symmetrical whole of studies in the world of human learning

Second, the adjustment of the branches of study in such a manner that the whole course at any given time represents all 15 the great divisions of human learning, as far as is possible at the stage of maturity at which the pupil has arrived, and that each allied group of studies is represented by some one of its branches best adapted for the epoch in question; it being implied that there is an equivalence of studies to a greater or 20 less degree within each group, and that each branch of human learning should be represented by some equivalent study; so that, while no great division is left unrepresented, no group

shall have superfluous representatives and thereby debar other groups from a proper representation.

3. *Psychological symmetry—the whole mind*

Third, the selection and arrangement of the branches and topics within each branch considered psychologically with a view to afford the best exercise of the faculties of the mind, and to secure the unfolding of those faculties in their natural order, so that no one faculty is so overcultivated or so neglected as to produce abnormal or one-sided mental development.

4. *Correlation of pupil's course of study with the world in which he lives—his spiritual and natural environment*

Fourth and chiefly, your Committee understands by correlation of studies the selection and arrangement in orderly sequence of such objects of study as shall give the child an insight into the world that he lives in, and a command over its resources such as is obtained by a helpful co-operation with one's fellows. In a word, the chief consideration to which all others are to be subordinated, in the opinion of your Committee, is this requirement of the civilization into which the child is born, as determining not only what he shall study in school, but what habits and customs he shall be taught in the family before the school age arrives; as well as that he shall acquire a skilled acquaintance with some one of a definite series of trades, professions, or vocations in the years that follow school; and, furthermore, that this question of the relation of the pupil to his civilization determines what political duties he shall assume and what religious faith or spiritual aspirations shall be adopted for the conduct of his life.

To make more clear their reasons for the preference here expressed for the objective and practical basis of selection of topics for the course of study, rather than the subjective basis so long favored by educational writers, your Committee would describe the psychological basis, already mentioned, as being merely formal in its character, relating only to the exercise of the so-called mental faculties.

It would furnish a training of spiritual powers analogous to the gymnastic training of the muscles of the body. Gymnastics may develop strength and agility without leading to any skill in trades or useful employment. So an abstract
5 psychological training may develop the will, the intellect, the imagination, or the memory, but without leading to an exercise of acquired power in the interests of civilization. The game of chess would furnish a good course of study for the discipline of the powers of attention and calculation of abstract
10 combinations, but it would give its possessor little or no knowledge of man or nature. The psychological ideal which has prevailed to a large extent in education has in the old phrenology, and in the recent studies in physiological psychology, sometimes given place to a biological ideal. Instead
15 of the view of mind as made up of faculties like will, intellect, imagination and emotion, conceived to be all necessary to the soul if developed in harmony with one another, the concept of nerves or brain-tracts is used as the ultimate regulative principle to determine the selection and arrangement of
20 studies. Each part of the brain is supposed to have its claim on the attention of the educator, and that study is thought to be the most valuable which employs normally the larger number of brain-tracts. This view reaches an extreme in the direction of formal as opposed to objective or practical grounds
25 for selecting a course of study. While the old psychology with its mental faculties concentrated its attention on the mental processes and neglected the world of existing objects and relations upon which those processes were directed, physiological psychology tends to confine its attention to the physical part
30 of the process, the organic changes in the brain cells and their functions.

Your Committee is of the opinion that psychology of both kinds, physiological and introspective, can hold only a subordinate place in the settlement of questions relating to the
35 correlation of studies. The branches to be studied, and the extent to which they are studied, will be determined mainly by the demands of one's civilization. These will prescribe

what is most useful to make the individual acquainted with physical nature and with human nature so as to fit him as an individual to perform his duties in the several institutions—family, civil society, the state, and the Church. But next after this, psychology will furnish important considerations that 5 will largely determine the methods of instruction, the order of taking up the several topics so as to adapt the school work to the growth of the pupil's capacity, and the amount of work so as not to overtax his powers by too much or arrest the development of strength by too little. A vast number of subor-10 dinate details belonging to the pathology of education, such as the hygienic features of school architecture and furniture, programmes, the length of study hours and of class exercises, recreation, and bodily reactions against mental effort, will be finally settled by scientific experiment in the department of 15 physiological psychology.

Inasmuch as your Committee is limited to the consideration of the correlation of studies in the elementary school, it has considered the question of the course of study in general only in so far as this has been found necessary in discussing the 20 grounds for the selection of studies for the period of school education occupying the eight years from six to fourteen years, or the school period between the kindergarten on the one hand and the secondary school on the other. It has not been possible to avoid some inquiry into the true distinction between 25 secondary and elementary studies, since one of the most important questions forced upon the attention of your Committee is that of the abridgment of the elementary course of study from eight or more years to seven or even six years, and the corresponding increase of the time devoted to studies usually 30 assigned to the high school and supposed to belong to the secondary course of study for some intrinsic reason.

II. THE COURSE OF STUDY—EDUCATIONAL VALUES

Your Committee would report that it has discussed in detail the several branches of study that have found a place in the curriculum of the elementary school, with a view to dis-35

cover their educational value for developing and training the faculties of the mind, and more especially for correlating the pupil with his spiritual and natural environment in the world in which he lives.

5

A. Language studies

There is first to be noted the prominent place of language study that takes the form of reading, penmanship, and grammar in the first eight years' work of the school. It is claimed for the partiality shown to these studies that it is justified by the fact that language is the instrument that makes possible human social organization. It enables each person to communicate his individual experience to his fellows and thus permits each to profit by the experience of all. The written and printed forms of speech preserve human knowledge and make progress in civilization possible. The conclusion is reached that learning to read and write should be the leading study of the pupil in his first four years of school. Reading and writing are not so much ends in themselves as means for the acquirement of all other human learning. This consideration alone would be sufficient to justify their actual place in the work of the elementary school. But these branches require of the learner a difficult process of analysis. The pupil must identify the separate words in the sentence he uses, and in the next place must recognize the separate sounds in each word. It requires a considerable effort for the child or the savage to analyze his sentence into its constituent words, and a still greater effort to discriminate its elementary sounds. Reading, writing, and spelling in their most elementary form, therefore, constitute a severe training in mental analysis for the child of six to ten years of age. We are told that it is far more disciplinary to the mind than any species of observation of differences among material things, because of the fact that the word has a twofold character—addressed to external sense as spoken sound to the ear, or as written and printed words to the eye—but containing a meaning or sense addressed to the understanding and only to be seized by introspection.

The pupil must call up the corresponding idea by thought, memory, and imagination, or else the word will cease to be a word and remain only a sound or character.

On the other hand, observation of things and movements does not necessarily involve this twofold act of analysis, intro- 5
spective and objective, but only the latter—the objective analysis. It is granted that we all have frequent occasion to condemn poor methods of instruction as teaching words rather than things. But we admit that we mean empty sounds or characters rather than true words. Our suggestions for the 10
correct method of teaching amount in this case simply to laying stress on the meaning of the word, and to setting the teaching process on the road of analysis of content rather than form. In the case of words used to store up external observation the teacher is told to repeat and make alive again the act 15
of observation by which the word obtained its original meaning. In the case of a word expressing a relation between facts or events, the pupil is to be taken step by step through the process of reflection by which the idea was built up. Since the word, spoken and written, is the sole instrument by which 20
reason can fix, preserve, and communicate both the data of sense and the relations discovered between them by reflection, no new method in education has been able to supplant in the school the branches, reading and penmanship. But the real improvements in method have led teachers to lay greater 25
and greater stress on the internal factor of the word, on its meaning, and have in manifold ways shown how to repeat the original experiences that gave the meaning to concrete words, and the original comparisons and logical deductions by which the ideas of relations and causal processes arose in the mind 30
and required abstract words to preserve and communicate them.

It has been claimed that it would be better to have first a basis of knowledge of things, and secondarily and subsequently a knowledge of words. But it has been replied to this, that the progress of the child in learning to talk indicates his ascent 35
out of mere impressions into the possession of true knowledge. For he names objects only after he has made some synthesis

of his impressions and has formed general ideas. He recognizes the same object under different circumstances of time and place, and also recognizes other objects belonging to the same class by and with names. Hence the use of the word
5 indicates a higher degree of self-activity—the stage of mere impressions without words or signs being a comparatively passive state of mind. What we mean by things first and words afterward, is therefore not the apprehension of objects by passive impressions so much as the active investigation and ex-
10 perimenting which come after words are used and the higher forms of analysis are called into being by that invention of reason known as language, which, as before said, is a synthesis of thing and thought, of outward sign and inward signification.

Rational investigation cannot precede the invention of lan-
15 guage any more than blacksmithing can precede the invention of hammers, anvils, and pincers. For language is the necessary tool of thought used in the conduct of the analysis and synthesis of investigation.

Your Committee would sum up these considerations by say-
20 ing that language rightfully forms the center of instruction in the elementary school, but that progress in methods of teaching is to be made, as hitherto, chiefly by laying more stress on the internal side of the word, its meaning; using better graded steps to build up the chain of experience or the train of
25 thought that the word expresses.

The first three years' work of the child is occupied mainly with the mastery of the printed and written forms of the words of his colloquial vocabulary; words that he is already familiar enough with as sounds addressed to the ear. He has to
30 become familiar with the new forms addressed to the eye, and it would be an unwise method to require him to learn many new words at the same time that he is learning to recognize his old words in their new shape. But as soon as he has acquired some facility in reading what is printed in the colloquial style,
35 he may go on to selections from standard authors. The literary selections should be graded, and are graded in almost all series of readers used in our elementary schools, in such

a way as to bring those containing the fewest words outside of the colloquial vocabulary into the lower books of the series, and increasing the difficulties step by step as the pupil grows in maturity. The selections are literary works of art possessing the required organic unity and a proper reflection of this 5 unity in the details, as good works of art must do. But they portray situations of the soul, or scenes of life, or elaborated reflections, of which the child can obtain some grasp through his capacity to feel and think, although in scope and compass they far surpass his range. They are adapted therefore to 10 lead him out of and beyond himself, as spiritual guides.

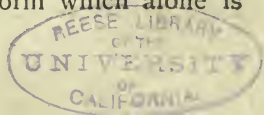
Literary style employs, besides words common to the colloquial vocabulary, words used in a semi-technical sense expressive of fine shades of thought and emotion. The literary work of art furnishes a happy expression for some situation of the 15 soul, or some train of reflection hitherto unutterable in an adequate manner. If the pupil learns this literary production, he finds himself powerfully helped to understand both himself and his fellow-men. The most practical knowledge of all, it will be admitted, is a knowledge of human nature—a knowl-20 edge that enables one to combine with his fellow-men and to share with them the physical and spiritual wealth of the race. Of this high character as humanizing or civilizing, are the favorite works of literature found in the school readers, about one hundred and fifty English and American writers being 25 drawn upon for the material. Such are Shakspeare's speeches of Brutus and Mark Antony, Hamlet's and Macbeth's soliloquies, Milton's *L'Allegro* and *Il Penseroso*, Gray's *Elegy*, Tennyson's *Charge of the Light Brigade* and *Ode on the Death of the Duke of Wellington*, Byron's *Waterloo*, Irving's 30 *Rip Van Winkle*, Webster's *Reply to Hayne*, The trial of Knapp, and Bunker Hill oration, Scott's *Lochinvar*, *Marmion*, and *Roderick Dhu*, Bryant's *Thanatopsis*, Longfellow's *Psalm of Life*, Paul Revere, and *The Bridge*, O'Hara's *Bivouac of the Dead*, Campbell's *Hohenlinden*, Collins' *How Sleep the* 35 *Brave*, Wolfe's *Burial of Sir John Moore*, and other fine prose and poetry from Addison, Emerson, Franklin, The Bible,

Hawthorne, Walter Scott, Goldsmith, Wordsworth, Swift, Milton, Cooper, Whittier, Lowell, and the rest. The reading and study of fine selections in prose and verse furnish the chief æsthetic training of the elementary school. But this
5 should be re-enforced by some study of photographic or other reproductions of the world's great masterpieces of architecture, sculpture, and painting. The frequent sight of these reproductions is good; the attempt to copy or sketch them with the pencil is better; best of all is an æsthetic lesson on
10 their composition, attempting to describe in words the idea of the whole that gives the work its organic unity, and the devices adopted by the artist to reflect this idea in the details and re-enforce its strength. The æsthetic taste of teacher and pupil can be cultivated by such exercises, and once set on the
15 road of development this taste may improve through life.

A third phase of language study in the elementary school is formal grammar. The works of literary art in the readers, re-enforced as they ought to be by supplementary reading at home of the whole works from which the selections for the
20 school readers are made, will educate the child in the use of a higher and better English style. Technical grammar never can do this. Only familiarity with fine English works will insure one a good and correct style. But grammar is the science of language, and as the first of the seven liberal arts it has long
25 held sway in school as the disciplinary study *par excellence*. A survey of its educational value, subjective and objective, usually produces the conviction that it is to retain the first place in the future. Its chief objective advantage is that it shows the structure of language, and the logical forms of subject, predicate, and modifier, thus revealing the essential nature of
30 thought itself, the most important of all objects because it is self-object. On the subjective or psychological side, grammar demonstrates its title to the first place by its use as a discipline in subtle analysis, in logical division and classification,
35 in the art of questioning, and in the mental accomplishment of making exact definitions. Nor is this an empty, formal discipline, for its subject matter, language, is a product of the

reason of a people not as individuals but as a social whole, and the vocabulary holds in its store of words the generalized experience of that people, including sensuous observation and reflection, feeling and emotion, instinct and volition.

No formal labor on a great objective field is ever lost wholly, 5 since at the very least it has the merit of familiarizing the pupil with the contents of some one extensive province that borders on his life, and with which he must come into correlation; but it is easy for any special formal discipline, when continued too long, to paralyze or arrest growth at that stage. 15 The overcultivation of the verbal memory tends to arrest the growth of critical attention and reflection. Memory of accessory details too, so much prized in the school, is also cultivated often at the expense of an insight into the organizing principle of the whole and the causal nexus that binds the parts. So 10 too the study of quantity, if carried to excess, may warp the mind into a habit of neglecting quality in its observation and reflection. As there is no subsumption in the quantitative judgment but only dead equality or inequality (A is equal to or greater or less than B), there is a tendency to atrophy in the fac- 20 ulty of concrete syllogistic reasoning on the part of the person devoted exclusively to mathematics. For the normal syllogism uses judgments wherein the subject is subsumed under the predicate (This is a rose—the individual rose is subsumed under the class rose; Socrates is a man, etc.). Such reasoning con- 25 cerns individuals in two aspects, first as concrete wholes and secondly as members of higher totalities or classes—species and genera. Thus, too, grammar, rich as it is in its contents, is only a formal discipline as respects the scientific, historic, or literary contents of language, and is indifferent to them. A 30 training for four or five years in parsing and grammatical analysis practiced on literary works of art (Milton, Shakspeare, Tennyson, Scott) is a training of the pupil into habits of indifference toward and neglect of the genius displayed in the literary work of art, and into habits of impertinent and trifling 35 attention to elements employed as material or texture, and a corresponding neglect of the structural form which alone is



the work of the artist. A parallel to this would be the mason's habit of noticing only the brick and mortar, or the stone and cement, in his inspection of the architecture, say of Sir Christopher Wren. A child overtrained to analyze and classify shades of color—examples of this one finds occasionally in a primary school whose specialty is "objective teaching"—might in later life visit an art gallery and make an inventory of colors without getting even a glimpse of a painting as a work of art. Such overstudy and misuse of grammar as one finds in the elementary school, it is feared, exists to some extent in secondary schools and even in colleges, in the work of mastering the classic authors.

Your Committee is unanimous in the conviction that formal grammar should not be allowed to usurp the place of a study of the literary work of art in accordance with literary method. The child can be gradually trained to see the technical "motives" of a poem or prose work of art and to enjoy the æsthetic inventions of the artist. The analysis of a work of art should discover the idea that gives it organic unity; the collision and the complication resulting; the solution and *dénouement*. Of course these things must be reached in the elementary school without even a mention of their technical terms. The subject of the piece is brought out; its reflection in the conditions of the time and place to heighten interest by showing its importance; its second and stronger reflection in the several details of its conflict and struggle; its reflection in the *dénouement* wherein its struggle ends in victory or defeat and the ethical or rational interests are vindicated,—and the results move outward, returning to the environment again in ever-widening circles,—something resembling this is to be found in every work of art, and there are salient features which can be briefly but profitably made subject of comment in familiar language with even the youngest pupils. There is an ethical and an æsthetical content to each work of art. It is profitable to point out both of these in the interest of the child's growing insight into human nature. The ethical should, however, be kept in subordination to the æsthetical, but for the sake of the

supreme interests of the ethical itself. Otherwise the study of a work of art degenerates into a goody-goody performance, and its effects on the child are to cause a reaction against the moral. The child protects his inner individuality against effacement through external authority by taking an attitude of rebellion against stories with an appended moral. Herein the superiority of the æsthetical in literary art is to be seen. For the ethical motive is concealed by the poet, and the hero is painted with all his brittle individualism and self-seeking. His passions and his selfishness, gilded by fine traits of bravery and noble manners, interest the youth, interest us all. The established social and moral order seems to the ambitious hero to be an obstacle to the unfolding of the charms of individuality. The deed of violence gets done, and the Nemesis is aroused. Now his deed comes back on the individual doer, and our sympathy turns against him and we rejoice in his fall. Thus the æsthetical unity contains within it the ethical unity. The lesson of the great poet or novelist is taken to heart, whereas the ethical announcement by itself might have failed, especially with the most self-active and aspiring of the pupils. Aristotle pointed out in his Poetics this advantage of the æsthetic unity, which Plato in his Republic seems to have missed. Tragedy purges us of our passions, to use Aristotle's expression, because we identify our own wrong inclinations with those of the hero, and by sympathy we suffer with him and see our intended deed returned upon us with tragic effect, and are thereby cured.

Your Committee has dwelt upon the æsthetic side of literature in this explicit manner because they believe that the general tendency in elementary schools is to neglect the literary art for the literary formalities which concern the mechanical material rather than the spiritual form. Those formal studies should not be discontinued, but subordinated to the higher study of literature.

Your Committee reserves the subject of language lessons, composition writing, and what relates to the child's expression of ideas in writing, for consideration under Part 3 of this Report, treating of programme.

B. Arithmetic

Side by side with language study is the study of mathematics in the schools, claiming the second place in importance of all studies. It has been pointed out that mathematics concerns the laws of time and space—their structural form, so to speak—
5 and hence that it formulates the logical conditions of all matter both in rest and in motion. Be this as it may, the high position of mathematics as the science of all quantity is universally acknowledged. The elementary branch of mathematics is arithmetic, and this is studied in the primary and grammar schools
10 from six to eight years, or even longer. The relation of arithmetic to the whole field of mathematics has been stated (by Comte, Howison, and others) to be that of the final step in a process of calculation in which results are stated numerically. There are branches that develop or derive quantitative func-
15 tions: say geometry for spatial forms, and mechanics for movement and rest and the forces producing them. Other branches transform these quantitative functions into such forms as may be calculated in actual numbers; namely, algebra in its common or lower form, and in its higher form as the differential and
20 integral calculus, and the calculus of variations. Arithmetic evaluates or finds the numerical value for the functions thus deduced and transformed. The educational value of arithmetic is thus indicated both as concerns its psychological side and its objective practical uses in correlating man with the
25 world of nature. In this latter respect as furnishing the key to the outer world in so far as the objects of the latter are a matter of direct enumeration,—capable of being counted,—it is the first great step in the conquest of nature. It is the first tool of thought that man invents in the work of emancipating
30 himself from thralldom to external forces. For by the command of number he learns to divide and conquer. He can proportion one force to another, and concentrate against an obstacle precisely what is needed to overcome it. Number also makes possible all the other sciences of nature which depend on
35 exact measurement and exact record of phenomena as to the

following items: order of succession, date, duration, locality, environment, extent of sphere of influence, number of manifestations, number of cases of intermittence. All these can be defined accurately only by means of number. The educational value of a branch of study that furnishes the indispensable first step toward all science of nature is obvious. But psychologically its importance further appears in this, that it begins with an important step in analysis; namely, the detachment of the idea of quantity from the concrete whole which includes quality as well as quantity. To count, one drops the qualitative and considers only the quantitative aspect. So long as the individual differences (which are qualitative in so far as they distinguish one object from another) are considered, the objects cannot be counted together. When counted, the distinctions are dropped out of sight as indifferent. As counting is the fundamental operation of arithmetic, and all other arithmetical operations are simply devices for speed by using remembered countings instead of going through the detailed work again each time, the hint is furnished the teacher for the first lessons in arithmetic. This hint has been generally followed out and the child set at work at first upon the counting of objects so much alike that the qualitative difference is not suggested to him. He constructs gradually his tables of addition, subtraction, and multiplication, and fixes them in his memory. Then he takes his next higher step, namely the apprehension of the fraction. This is an expressed ratio of two numbers, and therefore a much more complex thought than he has met with in dealing with the simple numbers. In thinking five-sixths he first thinks five and then six, and holding these two in mind thinks the result of the first modified by the second. Here are three steps instead of one, and the result is not a simple number but an inference resting on an unperformed operation. This psychological analysis shows the reason for the embarrassment of the child on his entrance upon the study of fractions and the other operations that imply ratio. The teacher finds all his resources in the way of method drawn upon to invent steps and half steps,

to aid the pupil to make continuous progress here. All these devices of method consist in steps by which the pupil descends to the simple number and returns to the complex. He turns one of the terms into a qualitative unit and thus is enabled to use the other as a simple number. The pupil takes the denominator, for example, and makes clear his conception of one-sixth as his qualitative unit, then five-sixths is as clear to him as five oxen. But he has to repeat this return from ratio to simple numbers in each of the elementary operations—
10 addition, subtraction, multiplication, and division, and in the reduction of fractions—and finds the road long and tedious at best. In the case of decimal fractions the psychological process is more complex still; for the pupil has given him one of the terms, the numerator, from which he must mentally deduce
15 the denominator from the position of the decimal point. This doubles the work of reading and recognizing the fractional number. But it makes addition and subtraction of fractions nearly as easy as that of simple numbers and assists also in multiplication of fractions. But division of decimals is a
20 much more complex operation than that of common fractions.

The want of a psychological analysis of these processes has led many good teachers to attempt decimal fractions with their pupils before taking up common fractions. In the end they have been forced to make introductory steps to aid the
25 pupil and in these steps to introduce the theory of the common fraction. They have by this refuted their own theory.

Besides (*a*) simple numbers and the four operations with them, (*b*) fractions common and decimal, there is (*c*) a third step in number, namely the theory of powers and roots. It is
30 a further step in ratio, namely the relation of a simple number to itself as power and root. The mass of material which fills the arithmetic used in the elementary school consists of two kinds of examples, first, those wherein there is a direct application of simple numbers, fractions, and powers, and secondly
35 the class of examples involving operations in reaching numerical solutions through indirect data and consequently involving more or less transformation of functions. Of this character

is most of the so-called higher arithmetic and such problems in the text-book used in the elementary schools as have, not inappropriately, been called (by General Francis A. Walker in his criticism on common-school arithmetic) numerical "conundrums." Their difficulty is not found in the strictly arithmetical part of the process of the solution (the third phase above described), but rather in the transformation of the quantitative function given into the function that can readily be calculated numerically. The transformation of functions belongs strictly to algebra. Teachers who love arithmetic, and who have themselves success in working out the so-called numerical conundrums, defend with much earnestness the current practice which uses so much time for arithmetic. They see in it a valuable training for ingenuity and logical analysis, and believe that the industry which discovers arithmetical ways of transforming the functions given in such problems into plain numerical operations of adding, subtracting, multiplying, or dividing is well bestowed. On the other hand the critics of this practice contend that there should be no merely formal drill in school for its own sake, and that there should be, always, a substantial content to be gained. They contend that the work of the pupil in transforming quantitative functions by arithmetical methods is wasted, because the pupil needs a more adequate expression than number for this purpose; that this has been discovered in algebra, which enables him to perform with ease such quantitative transformations as puzzle the pupil in arithmetic. They hold, therefore, that arithmetic pure and simple should be abridged and elementary algebra introduced after the numerical operations in powers, fractions, and simple numbers have been mastered, together with their applications to the tables of weights and measures and to percentage and interest. In the seventh year of the elementary course there would be taught equations of the first degree and the solution of arithmetical problems that fall under proportion or the so-called "rule of three," together with other problems containing complicated conditions—those in partnership for example. In the eighth year quadratic

equations could be learned, and other problems of higher arithmetic solved in a more satisfactory manner than by numerical methods. It is contended that this earlier introduction of algebra, with a sparing use of letters for known quantities, would secure far more mathematical progress than is obtained at present on the part of all pupils, and that it would enable many pupils to go on into secondary and higher education who are now kept back on the plea of lack of preparation in arithmetic, the real difficulty in many cases being a lack of ability to solve algebraic problems by an inferior method.

Your Committee would report that the practice of teaching two lessons daily in arithmetic, one styled "mental" or "intellectual" and the other "written" arithmetic (because its exercises are written out with pencil or pen) is still continued in many schools. By this device the pupil is made to give twice as much time to arithmetic as to any other branch. It is contended by the opponents of this practice, with some show of reason, that two lessons a day in the study of quantity have a tendency to give the mind a bent or set in the direction of thinking quantitatively with a corresponding neglect of the power to observe, and to reflect upon, qualitative and causal aspects. For mathematics does not take account of causes, but only of equality and difference in magnitude. It is further objected that the attempt to secure what is called thoroughness in the branches taught in the elementary schools is often carried too far; in fact, to such an extent as to produce arrested development (a sort of mental paralysis) in the mechanical and formal stages of growth. The mind in that case loses its appetite for higher methods and wider generalizations. The law of apperception, we are told, proves that temporary methods of solving problems should not be so thoroughly mastered as to be used involuntarily or as a matter of unconscious habit, for the reason that a higher and a more adequate method of solution will then be found more difficult to acquire. The more thoroughly a method is learned, the more it becomes part of the mind and the greater the repugnance of the mind toward a new method. For this reason

parents and teachers discourage young children from the practice of counting on the fingers, believing that it will cause much trouble later to root out this vicious habit and replace it by purely mental processes. Teachers should be careful, especially with precocious children, not to continue too long 5 in the use of a process that is becoming mechanical; for it is already growing into a second nature, and becoming a part of the unconscious apperceptive process by which the mind reacts against the environment, recognizes its presence, and explains it to itself. The child that has been overtrained in arithmetic 10 reacts apperceptively against his environment chiefly by noticing its numerical relations—he counts and adds; his other apperceptive reactions being feeble, he neglects qualities and causal relations. Another child who has been drilled in recognizing colors apperceives the shades of color to the neglect of 15 all else. A third child, excessively trained in form studies by the constant use of geometric solids and much practice in looking for the fundamental geometric forms lying at the basis of the multifarious objects that exist in the world, will as a matter of course apperceive geometric forms, ignoring the 20 other phases of objects.

It is, certainly, an advance on immediate sense-perception to be able to separate or analyze the concrete, whole impression, and consider the quantity apart by itself. But if arrested mental growth takes place here the result is deplorable. That 25 such arrest may be caused by too exclusive training in recognizing numerical relations is beyond a doubt.

Your Committee believes that, with the right methods, and a wise use of time in preparing the arithmetic lesson in and out of school, five years are sufficient for the study 30 of mere arithmetic—the five years beginning with the second school year and ending with the close of the sixth year; and that the seventh and eighth years should be given to the algebraic method of dealing with those problems that involve difficulties in the transformation of quantitative indirect func- 35 tions into numerical or direct quantitative data.

Your Committee, however, does not wish to be understood

as recommending the transfer of algebra, as it is understood and taught in most secondary schools, to the seventh year or even to the eighth year of the elementary school. The algebra course in the secondary school, as taught to pupils in their
5 fifteenth year of age, very properly begins with severe exercises with a view to discipline the pupil in analyzing complex literate expressions at sight and to make him able to recognize at once the factors that are contained in such combinations of quantities. The proposed seventh-grade algebra must use
10 letters for the unknown quantities and retain the numerical form of the known quantities, using letters for these very rarely, except to exhibit the general form of solution or what, if stated in words, becomes a so-called "rule" in arithmetic. This species of algebra has the character of an introduction or
15 transitional step to algebra proper. The latter should be taught thoroughly in the secondary school. Formerly it was a common practice to teach elementary algebra of this sort in the preparatory schools and reserve for the college a study of algebra proper. But in this case there was often a neglect of
20 sufficient practice in factoring literate quantities, and as a consequence the pupil suffered embarrassment in his more advanced mathematics, for example in analytical geometry, the differential calculus, and mechanics. The proposition of your Committee is intended to remedy the two evils already
25 named: first to aid the pupils in the elementary school to solve, by a higher method, the more difficult problems that now find place in advanced arithmetic; and secondly, to prepare the pupil for a thorough course in pure algebra in the secondary school.

30 Your Committee is of the opinion that the so-called mental arithmetic should be made to alternate with written arithmetic for two years and that there should not be two daily lessons in this subject.

C. Geography

The leading branch of the seven liberal arts was grammar,
35 being the first of the *Trivium* (grammar, rhetoric, and logic).

Arithmetic, however, led the second division, the *Quadrivium* (arithmetic, geometry, music, and astronomy). We have glanced at the reasons for the place of grammar as leading the humane studies as well as for the place of arithmetic as leading the nature studies. Following arithmetic as the second study in importance among the branches that correlate man to nature is geography. It is interesting to note that the old quadrivium of the Middle Ages included geography, under the title of geometry, as the branch following arithmetic in the enumeration; the subject matter of their so-called "geometry" being chiefly an abridgment of Pliny's geography, to which were added a few definitions of geometric forms, something like the primary course in geometric solids in our elementary schools. So long as there has been elementary education there has been something of geography included. The Greek education laid stress on teaching the second book of Homer containing the Catalogue of the Ships and a brief mention of the geography and history of all the Greek tribes that took part in the Trojan War. History remains unseparated from geography and geometry in the Middle Ages. Geography has preserved this comprehensiveness of meaning as a branch of the study in the elementary schools down to the present day. After arithmetic, which treats of the abstract or general conditions of material existence, comes geography with a practical study of man's material *habitat* and its relations to him. It is not a simple science by itself, like botany or geology or astronomy, but a collection of sciences levied upon to describe the earth as the dwelling place of man and to explain something of its more prominent features. About one-fourth of the material relates strictly to the geography, about one-half to the inhabitants, their manners, customs, institutions, industries, productions, and the remaining one-fourth to items drawn from the sciences of mineralogy, meteorology, botany, zoölogy, and astronomy. This predominance of the human feature in a study ostensibly relating to physical nature, your Committee considers necessary and entirely justifiable. The child commences with what is nearest to his interests, and proceeds gradually toward what is

remote and to be studied for its own sake. It is therefore a mistake to suppose that the first phase of geography presented to the child should be the process of continent formation. He must begin with the natural differences of climate and lands and waters and obstacles that separate peoples, and study the methods by which man strives to equalize or overcome these differences by industry and commerce, to unite all places and all people, and make it possible for each to share in the productions of all. The industrial and commercial idea is therefore the first central idea in the study of geography in the elementary schools. It leads directly to the natural elements of difference in climate, soil, and productions, and also to those in race, religion, political status, and occupations of the inhabitants, with a view to explain the grounds and reasons for this counter-process of civilization which struggles to overcome the differences. Next comes the deeper inquiry into the process of continent formation, the physical struggle between the process of upheaving or upbuilding of continents and that of their obliteration by air and water; the explanation of the mountains, valleys, and plains, the islands, volcanic action, the winds, the rain-distribution. But the study of cities, their location, the purposes they serve as collecting, manufacturing, and distributing centers, leads most directly to the immediate purpose of geography in the elementary school. From this beginning, and holding to it as a permanent interest, the inquiry into causes and conditions proceeds concentrically to the sources of the raw materials, the methods of their production and the climatic, geologic, and other reasons that explain their location and their growth.

In recent years, especially through the scientific study of physical geography, the processes that go to the formation of climate, soil, and general configuration of land masses have been accurately determined, and the methods of teaching so simplified that it is possible to lead out from the central idea mentioned to the physical explanations of the elements of geographical difference quite early in the course of study. Setting out from the idea of the use made of the earth by

civilization, the pupil in the fifth and sixth years of his schooling (at the age of eleven or twelve) may extend his inquiries quite profitably as far as the physical explanations of land-shapes and climates. In the seventh and eighth year of school much more may be done in this direction. But it is believed that 5 the distinctively human interest connected with geography in the first years of its study should not yield to the purely scientific one of physical processes until the pupil has taken up the study of history.

The educational value of geography, as it is and has been in 10 elementary schools, is obviously very great. It makes possible something like accuracy in the picturing of distant places and events and removes a large tract of mere superstition from the mind. In the days of newspaper reading one's stock of geographical information is in constant requisition. A war on 15 the opposite side of the globe is followed with more interest in this year than a war near our own borders before the era of the telegraph. The general knowledge of the locations and boundaries of nations, of their status in civilization and their natural advantages for contributing to the world market, is 20 of great use to the citizen in forming correct ideas from his daily reading.

The educational value of geography is even more apparent if we admit the claims of those who argue that the present epoch is the beginning of an era in which public opinion is 25 organized into a ruling force by the agency of periodicals and books. Certainly neither the newspaper nor the book can influence an illiterate people: they can do little to form opinions where the readers have no knowledge of geography.

As to the psychological value of geography little need be 30 said. It exercises in manifold ways the memory of forms and the imagination; it brings into exercise the thinking power in tracing back toward unity the various series of causes. What educative value there is in geology, meteorology, zoölogy, ethnology, economics, history, and politics is to be found in 35 the more profound study of geography, and, to a proportionate extent, in the study of its merest elements.

Your Committee is of the opinion that there has been a vast improvement in the methods of instruction in this branch in recent years, due in large measure to the geographical societies of this and other countries. At first there prevailed what might be named sailor geography. The pupil was compelled to memorize all the capes and headlands, bays and harbors, mouths of rivers, islands, sounds, and straits around the world. He enlivened this to some extent by brief mention of the curiosities and oddities in the way of cataracts, water-gaps, caves, strange animals, public buildings, picturesque costumes, national exaggerations, and such matters as would furnish good themes for sailors' yarns. Little or nothing was taught to give unity to the isolated details furnished in endless number. It was an improvement on this when the method of memorizing capital cities and political boundaries succeeded. With this came the era of map drawing. The study of watersheds and commercial routes, of industrial productions and centers of manufacture and commerce, has been adopted in the better class of schools. Instruction in geography is growing better by the constant introduction of new devices to make plain and intelligible the determining influence of physical causes in producing the elements of difference and the counter-process of industry and commerce by which each difference is rendered of use to the whole world and each locality made a participant in the productions of all.

D. History

The next study, ranked in order of value, for the elementary school is History. But, as will be seen, the value of history, both practically and psychologically, is less in the beginning and greater at the end than geography. For it relates to the institutions of men, and especially to the political state and its evolution. While biography narrates the career of the individual, civil history records the careers of nations. The nation has been compared to the individual by persons interested in the educational value of history. Man has two selves, they say, the individual self, and the collective self of the

organized state or nation. The study of history is, then, the study of this larger, corporate, social, and civil self. The importance of this idea is thus brought out more clearly in its educational significance. For to learn this civil self is to learn the substantial condition which makes possible the existence of civilized man in all his other social combinations—the family, the Church, and the manifold associated activities of civil society. For the state protects these combinations from destruction by violence. It defines the limits of individual and associated effort, within which each endeavor re-enforces the endeavors of all, and it uses the strength of the whole nation to prevent such actions as pass beyond these safe limits and tend to collision with the normal action of the other individuals and social units. Hobbes called the state a Leviathan, to emphasize its stupendous individuality and organized self-activity. Without this, he said, man lives in a state of “constant war, fear, poverty, filth, ignorance, and wretchedness; within the state dwell peace, security, riches, science, and happiness.” The state is the collective man who “makes possible the rational development of the individual man, like a mortal God, subduing his caprice and passion and compelling obedience to law, developing the ideas of justice, virtue, and religion, creating property and ownership, nurture and education.” The education of the child into a knowledge of this higher self begins early within the nurture of the family. The child sees a policeman or some town officer, some public building, a court house or a jail; he sees or hears of an act of violence, a case of robbery or murder followed by arrest of the guilty. The omnipresent higher self, which has been invisible hitherto, now becomes visible to him in its symbols and still more in its acts.

History in school, it is contended, should be the special branch for education in the duties of citizenship. There is ground for this claim. History gives a sense of belonging to a higher social unity which possesses the right of absolute control over person and property in the interest of the safety of the whole. This, of course, is the basis of citizenship; the

individual must feel this or see this solidarity of the state and recognize its supreme authority. But history shows the collisions of nations, and the victory of one political ideal accompanied by the defeat of another. History reveals an evolution of forms of government that are better and better adapted to permit individual freedom, and the participation of all citizens in the administration of the government itself.

People who make their own government have a special interest in the spectacle of political evolution as exhibited in history. But it must be admitted that this evolution has not been well presented by popular historians. Take, for instance, the familiar example of old-time pedagogy, wherein the Roman republic was conceived as a freer government than the Roman empire that followed it, by persons apparently misled by the ideas of representative self-government associated with the word *republic*. It was the beginning of a new epoch when this illusion was dispelled, and the college student became aware of the true Roman meaning of *republic*, namely, the supremacy of an oligarchy on the Tiber that ruled distant provinces in Spain, Gaul, Asia Minor, Germany, and Africa, for its selfish ends and with an ever-increasing arrogance. The people at home in Rome, not having a share in the campaigns on the borderland, did not appreciate the qualities of the great leaders who, like Cæsar, subdued the nations by forbearance, magnanimity, trust, and the recognition of a sphere of freedom secured to the conquered by the Roman civil laws, which were rigidly enforced by the conqueror, as much as by the violence of arms. The change from republic to empire meant the final subordination of this tyrannical Roman oligarchy, and the recognition of the rights of the provinces to Roman freedom. This illustration shows how easily a poor teaching of history may pervert its good influence or purpose into a bad one. For the Roman monarchy under the empire secured a degree of freedom never before attained under the republic, in spite of the election of such tyrants as Nero and Caligula to the imperial purple. The civil service went on as usual administering the affairs of distant countries, educating them in Roman jurisprudence, and

cultivating a love for accumulating private property. Those countries had before lived communistically after the style of the tribe or at best of the village community. Roman private property in land gave an impulse to the development of free individuality such as had always been impossible under the 5 social stage of development known as the village community.

To teach history properly is to dispel this shallow illusion which flatters individualism, and to open the eyes of the pupil to the true nature of freedom, namely the freedom through obedience to just laws enforced by a strong government. 10

Your Committee has made this apparent digression for the sake of a more explicit statement of its conviction of the importance of teaching history in a different spirit from that of abstract freedom, which sometimes means anarchy, although they admit the possibility of an opposite extreme, the danger 15 of too little stress on the progressive element in the growth of nations and its manifestation in new and better political devices for representing all citizens without weakening the central power.

That the history of one's own nation is to be taught in the 20 elementary school seems fixed by common consent. United States history includes first a sketch of the epoch of discoveries and next of the epoch of colonization. This fortunately suits the pedagogic requirements. For the child loves to approach the stern realities of a firmly established civilization through 25 its stages of growth by means of individual enterprise. Here is the use of biography as introduction to history. It treats of exceptional individuals whose lives bring them in one way or another into national or even world-historical relations. They throw light on the nature and necessity of governments, and 30 are in turn illuminated by the light thrown back on them by the institutions which they promote or hinder. The era of semi-private adventure with which American history begins is admirably adapted for study by the pupil in the elementary stage of his education. So too the next epoch, that of coloni- 35 zation. The pioneer is a degree nearer to civilization than is the explorer and discoverer. In the colonial history the pupil

interests himself in the enterprise of aspiring individualities, in their conquest over obstacles of climate and soil; their conflicts with the aboriginal population; their choice of land for settlement; the growth of their cities; above all, their several attempts and final success in forming a constitution securing local self-government. An epoch of growing interrelation of the colonies succeeds, a tendency to union on a large scale due to the effect of European wars which involved England, France, and other countries, and affected the relations of their colonies in America. This epoch too abounds in heroic personalities, like Wolfe, Montcalm, and Washington, and perilous adventures, especially in the Indian warfare.

The fourth epoch is the Revolution, by which the Colonies through joint effort secured their independence and afterward their union in a nation. The subject grows rapidly more complex and tasks severely the powers of the pupils in the eighth year of the elementary school. The formation of the Constitution, and a brief study of the salient features of the Constitution itself, conclude the study of the portion of the history of the United States that is sufficiently remote to be treated after the manner of an educational classic. Everything up to this point stands out in strong individual outlines and is admirably fitted for that elementary course of study. Beyond this point, the War of 1812 and the War of the Rebellion, together with the political events that led to it, are matters of memory with the present generation of parents and grandparents, and are consequently not so well fitted for intensive study in school as the already classic period of our history. But these later and latest epochs may be and will be read at home not only in the text-book on history used in the schools, but also in the numerous sketches that appear in newspapers, magazines, and in more pretentious shapes. In the intensive study which should be undertaken of the classic period of our history, the pupil may be taught the method appropriate to historical investigation, the many points of view from which each event ought to be considered. He should learn to discriminate between the theatrical show of events and

the solid influences that move underneath as ethical causes. Although he is too immature for very far-reaching reflections, he must be helped to see the causal processes of history. Armed with this discipline in historic methods, the pupil will do all of his miscellaneous reading and thinking in this province 5 with more adequate intellectual reaction than was possible before the intensive study carried on in school.

The study of the outlines of the Constitution, for ten or fifteen weeks in the final year of the elementary school, has been found of great educational value. Properly taught, it 10 fixes the idea of the essential threefoldness of the constitution of a free government and the necessary independence of each constituent power, whether legislative, judicial, or executive. This and some idea of the manner and mode of filling the official places in these three departments, and of the character 15 of the duties with which each department is charged, lay foundations for an intelligent citizenship.

Besides this intensive study of the history of the United States in the seventh and eighth years, your Committee would recommend oral lessons on the salient points of general history, 20 taking a full hour of sixty minutes weekly—and preferably all at one time—for the sake of the more systematic treatment of the subject of the lesson and the deeper impression made on the mind of the pupil.

E. Other branches

Your Committee has reviewed the staple branches of the 25 elementary course of study in the light of their educational scope and significance. Grammar, literature, arithmetic, geography, and history are the five branches upon which the disciplinary work of the elementary school is concentrated. Inasmuch as reading is the first of the scholastic arts, it is interesting 30 to note that the whole elementary course may be described as an extension of the process of learning the art of reading. First comes the mastering of the colloquial vocabulary in printed and script forms. Next come five incursions into the special vocabularies required (a) in literature to express the fine shades 35

of emotion and the more subtle distinctions of thought, (b) the technique of arithmetic, (c) of geography, (d) of grammar, (e) of history.

In the serious work of mastering these several technical vocabularies the pupil is assigned daily tasks that he must prepare by independent study. The class exercise or recitation is taken up with examining and criticising the pupil's oral statements of what he has learned, especial care being taken to secure the pupil's explanation of it in his own words. This requires paraphrases and definitions of the new words and phrases used in technical and literary senses, with a view to insure the addition to the mind of the new ideas corresponding to the new words. The misunderstandings are corrected and the pupil set on the way to use more critical alertness in the preparation of his succeeding lessons. The pupil learns as much by the recitations of his fellow-pupils as he learns from the teacher, but not the same things. He sees in the imperfect statements of his classmates that they apprehended the lesson with different presuppositions and consequently have seen some phases of the subject that escaped his observation, while they in turn have missed points which he had noticed quite readily. These different points of view become more or less his own, and he may be said to grow by adding to his own mind the minds of others.

It is clear that there are other branches of instruction that may lay claim to a place in the course of study of the elementary school; for example the various branches of natural science, vocal music, manual training, physical culture, drawing, etc.

Here the question of another method of instruction is suggested. There are lessons that require previous preparation by the pupil himself—there are also lessons that may be taken up without such preparation and conducted by the teacher, who leads the exercise and furnishes a large part of the information to be learned, enlisting the aid of members of the class for the purpose of bringing home the new material to their actual experience. Besides these there are mechanical exercises for purposes of training, such as drawing, penmanship, and calisthenics.

In the first place there is industrial and æsthetic drawing, which should have a place in all elementary school work. By it is secured the training of the hand and eye. Then, too, drawing helps in all the other branches that require illustration. Moreover, if used in the study of the great works of art 5 in the way hereinbefore mentioned, it helps to cultivate the taste and prepares the future workman for a more useful and lucrative career, inasmuch as superior taste commands higher wages in the finishing of all goods.

Natural science claims a place in the elementary school not 10 so much as a disciplinary study side by side with grammar, arithmetic, and history, as a training in habits of observation and in the use of the technique by which such sciences are expounded. With a knowledge of the technical terms and some training in the methods of original investigation employed 15 in the sciences, the pupil broadens his views of the world and greatly increases his capacity to acquire new knowledge. For the pupil who is unacquainted with the technique of science has to pass without mental profit the numerous scientific allusions and items of information which more and more 20 abound in all our literature, whether of an ephemeral or a permanent character. In an age whose proudest boast is the progress of science in all domains, there should be in the elementary school, from the first, a course in the elements of the sciences. And this is quite possible; for each science 25 possesses some phases that lie very near to the child's life. These familiar topics furnish the doors through which the child enters the various special departments. Science, it is claimed, is nothing if not systematic. Indeed, science itself may be defined as the interpretation of each fact through all other 30 facts of a kindred nature. Admitting that this is so, it is no less true that pedagogic method begins with the fragmentary knowledge possessed by the pupil and proceeds to organize it and build it out systematically in all directions. Hence any science may be taken up best on the side nearest the experience 35 of the pupil and the investigation continued until the other parts are reached. Thus the pedagogical order is not always

the logical or scientific order. In this respect it agrees with the order of discovery, which is usually something quite different from the logical order, for that is the last thing discovered. The natural sciences have two general divisions: one relating to inorganic matter, as physics and chemistry, and one relating to organic, as botany and zoölogy. There should be a spiral course in natural science, commencing each branch with the most interesting phases to the child. A first course should be given in botany, zoölogy, and physics, so as to treat of the structure and uses of familiar plants and animals, and the explanation of physical phenomena as seen in the child's playthings, domestic machines, etc. A second course covering the same subjects, but laying more stress on classification and functions, will build on to the knowledge already acquired from the former lessons and from his recently acquired experience.

A third course of weekly lessons, conducted by the teacher as before in a conversational style, with experiments and with a comparison of the facts of observation already in the possession of the children, will go far to helping them to an acquisition of the results of natural science. Those of the children specially gifted for observation in some one or more departments of nature will be stimulated and encouraged to make the most of their gifts.

In the opinion of your Committee there should be set apart a full hour each week for drawing and the same amount for oral lessons in natural science.

The oral lessons in history have already been mentioned. The spiral course, found useful in natural science because of the rapid change in capacity of comprehension by the pupil from his sixth to his fourteenth year, will also be best for the history course, which will begin with biographical adventures of interest to the child, and possessing an important historical bearing. These will proceed from the native land first to England, the parent country, and then to the classic civilizations (Greece and Rome being, so to speak, the grandparent countries of the American colonies). These successive courses of oral lessons adapted respectively to the child's capacity will do much to make the child well informed on this topic. Oral

lessons should never be mere lectures, but more like Socratic dialogues, building up a systematic knowledge partly from what is already known, partly by new investigations, and partly by comparison of authorities.

The best argument in favor of weekly oral lessons in natural science and general history is the actual experiences of teachers who have for some time used the plan. It has been found that the lessons in botany, zoölogy, and physics give the pupil much aid in learning his geography and other lessons relating to nature, while the history lessons assist very much his comprehension of literature, and add interest to geography.

It is understood by your Committee that the lessons in physiology and hygiene (with special reference to the effects of stimulants and narcotics) required by State laws should be included in this oral course in natural science. Manual training, so far as the theory and use of the tools for working in wood and iron are concerned, has just claims on the elementary school for a reason similar to that which admits natural science. From science have proceeded useful inventions for the aid of all manner of manufactures and transportation. The child of to-day lives in a world where machinery is constantly at his hand. A course of training in wood- and iron-work, together with experimental knowledge of physics or natural philosophy, makes it easy for him to learn the management of such machines. Sewing and cookery have not the same but stronger claims for a place in school. One-half day in each week for one-half a year each in the seventh and eighth grades will suffice for manual training, the sewing and cookery being studied by the girls, and the wood- and iron-work by the boys. It should be mentioned, however, that the advocates of manual training in iron- and wood-work recommend these branches for secondary schools, because of the greater maturity of body, and the less likelihood to acquire wrong habits of manipulation, in the third period of four years of school.

Vocal music has long since obtained a well-established place in all elementary schools. The labors of two generations of special teachers have reduced the steps of instruction to such

simplicity that whole classes may make as regular progress in reading music as in reading literature.

- In regard to physical culture your Committee is agreed that there should be some form of special daily exercises amounting in the aggregate to one hour each week, the same to include the main features of calisthenics, and German, Swedish, or American systems of physical training, but not to be regarded as a substitute for the old-fashioned recess established to permit the free exercise of the pupils in the open air.
- Systematic physical training has for its object rather the will training than recreation, and this must not be forgotten. To go from a hard lesson to a series of calisthenic exercises is to go from one kind of will training to another. Exhaustion of the will should be followed by the caprice and wild freedom of the recess. But systematic physical exercise has its sufficient reason in its aid to a graceful use of the limbs, its development of muscles that are left unused or rudimentary unless called forth by special training, and for the help it gives to the teacher in the way of school discipline.
- Your Committee would mention in this connection instruction in morals and manners, which ought to be given in a brief series of lessons each year with a view to build up in the mind a theory of the conventionalities of polite and pure-minded society. If these lessons are made too long or too numerous, they are apt to become offensive to the child's mind. It is of course understood by your Committee that the substantial moral training of the school is performed by the discipline rather than by the instruction in ethical theory. The child is trained to be regular and punctual, and to restrain his desire to talk and whisper—in these things gaining self-control day by day. The essence of moral behavior is self-control. The school teaches good behavior. The intercourse of a pupil with his fellows without evil words or violent actions is insisted on and secured. The higher moral qualities of truth-telling and sincerity are taught in every class exercise that lays stress on accuracy of statement.

Your Committee has already discussed the importance of

teaching something of algebraic processes in the seventh and eighth grades with the view to obtaining better methods of solving problems in advanced arithmetic; a majority of your Committee are of the opinion that formal English grammar should be discontinued in the eighth year, and the study of some foreign language, preferably that of Latin, substituted; The educational effect on an English-speaking pupil of taking up a language which, like Latin, uses inflections instead of prepositions, and which further differs from English by the order in which its words are arranged in the sentence, is quite marked, and a year of Latin places a pupil by a wide interval out of the range of the pupil who has continued English grammar without taking up Latin. But the effect of the year's study of Latin increases the youth's power of apperception in very many directions by reason of the fact that so much of the English vocabulary used in technical vocabularies, like those of geography, grammar, history, and literature, is from a Latin source, and besides there are so many traces in the form and substance of human learning of the hundreds of years when Latin was the only tongue in which observation and reflection could be expressed.

Your Committee refers to the programme given later in this report for the details of co-ordinating these several branches already recommended.

The difference between elementary and secondary studies

In recommending the introduction of algebraic processes in the seventh and eighth years—as well as in the recommendation just now made to introduce Latin in the eighth year of the elementary course—your Committee has come face to face with the question of the intrinsic difference between elementary and secondary studies.

Custom has placed algebra, geometry, the history of English literature, and Latin in the rank of secondary studies; also general history, physical geography, and the elements of physics and chemistry. In a secondary course of four years trigonometry may be added to the mathematics; some of

the sciences whose elements are used in physical geography may be taken up separately in special treatises, as geology, botany, and physiology. There may be also a study of whole works of English authors, as Shakspeare, Milton, and Scott.

5 Greek is also begun in the second or third year of the secondary course. This is the custom in most public high schools. But in private secondary schools Latin is begun earlier, and so, too, Greek, algebra, and geometry. Sometimes

10 geometry is taken up before algebra, as is the custom in German schools. These arrangements are based partly on tradition, partly on the requirements of higher institutions for admission, and partly on the ground that the intrinsic difficulties in these studies have fixed their places in the course of study. Of those who claim that there is an intrinsic reason

15 for the selection and order of these studies, some base their conclusions on experience in conducting pupils through them, others on psychological grounds. The latter contend, for example, that algebra deals with general forms of calculation, while arithmetic deals with the particular instances of calculation.

20 Whatever deals with the particular instance is relatively elementary, whatever deals with the general form is relatively secondary. In the expression $a+b=c$ algebra indicates the form of all addition. This arithmetic cannot do, except in the form of a verbal rule describing the steps of the operation: its

25 examples are all special instances falling under the general form given in algebra. If, therefore, arithmetic is an elementary branch, algebra is relatively to it a secondary branch. So, too, geometry, though not directly based on arithmetic, has to presuppose an acquaintance with it when it reduces

30 spatial functions into numerical forms, as, for example, in the measurement of surfaces and solids, and in ascertaining the ratio of the circumference to the radius, and of the hypotenuse to the two other sides of the right-angled triangle. Geometry, moreover, deals with necessary relations; its demon-

35 strations reach universal and necessary conclusions, holding good not merely in such material shapes as we have met with in actual experience, but with all examples possible, past,

present, or future. Such knowledge transcending experience is intrinsically secondary as compared with the first acquaintance with geometric shapes in concrete examples.

In the case of geometry it is claimed by some that what is called "inventional geometry" may be properly introduced into 5 the elementary grades. By this some mean the practice with blocks in the shape of geometric solids and the construction of different figures from the same; others mean the rediscovery by the pupil for himself of the necessary relations demonstrated by Euclid. The former—exercises of construc- 10 tion with blocks—are well enough in the kindergarten, where they assist in learning number, as well as in the analysis of material forms. But its educational value is small for pupils advanced into the use of books. The original discovery of Euclid's demonstrations, on the other hand, belongs more prop- 15 erly to higher education than to elementary. In the geometrical text-books recently introduced into secondary schools there is so much of original demonstration required that the teacher is greatly embarrassed on account of the differences in native capacity for mathematics that develop among the pupils of the 20 same class in solving the problems of invention. A few gifted pupils delight in the inventions, and develop rapidly in power, while the majority of the class use too much time over them, and thus rob the other branches of the course of study, or else fall into the bad practice of getting help from others in the 25 preparation of their lessons. A few in every class fall hopelessly behind and are discouraged. The result is an attempt on the part of the teacher to correct the evil by requiring a more thorough training in the mathematical studies preceding, and the consequent delay of secondary pupils in the lower grades of 30 the course in order to bring up their "inventional geometry." Many, discouraged, fail to go on; many more fail to reach higher studies because unable to get over the barrier unnecessarily placed before them by teachers who desire that no pupils except natural geometricians shall enter into higher studies. 35

Physical geography in its scientific form is very properly made a part of the secondary course of study. The pupil in

his ninth year of work can profitably acquire the scientific technique of geology, botany, zoölogy, meteorology, and ethnology, and in the following years take up those sciences separately and push them further, using the method of actual investigation. The subject-matter of physical geography is of very high interest to the pupil who has studied geography in the elementary grades after an approved method. It takes up the proximate grounds and causes for the elements of difference on the earth's surface, already become familiar to him through his elementary studies, and pushes them back into deeper, simpler, and more satisfactory principles. This study performs the work also of correlating the sciences that relate to organic nature by showing their respective uses to man. From the glimpses which the pupil gets of mineralogy, geology, botany, zoölogy, ethnology, and meteorology in their necessary connection as geographic conditions he sees the scope and grand significance of those separate inquiries. A thirst is aroused in him to pursue his researches into their domains. He sees, too, the borderlands in which new discoveries may be made by the enterprising explorer.

Physics, including what was called until recently "natural philosophy," after Newton's *Principia* (*Philosophiæ naturalis principia mathematica*), implies more knowledge of mathematics for its thorough discussion than the secondary pupil is likely to possess. In fact, the study of this branch in college thirty years ago was crippled by the same cause. It should follow the completion of analytical geometry. Notwithstanding this, a very profitable study of this subject may be made in the second year of the high school or preparatory school, although the formulas can then be understood in so far as they imply elementary algebra only. The pupil does not get the most exact notions of the quantitative laws that rule matter in its states of motion and equilibrium, but he does see the action of forces as qualitative elements of phenomena, and understand quite well the mechanical inventions by which men subdue them for his use and safety. Even in the elementary grades the pupil can seize very many of these qualitative aspects and learn the

explanation of the mechanical phenomena of nature, and other applications of the same principles in invention, as for example, gravitation in falling bodies: its measurement by the scales; the part it plays in the pump, the barometer, the pendulum; cohesion in mud, clay, glue, paste, mortar, cement, etc.; 5 capillary attraction in lamp-wicks, sponges, sugar, the sap in plants; the applications of lifting by the lever, pulley, inclined plane, wedge, and screw; heat in the sun, combustion, friction, steam, thermometer, conduction, clothing, cooking, etc.: the phenomena of light, electricity, magnetism, and the 10 explanation of such mechanical devices as spectacles, telescopes, microscopes, prisms, photographic cameras, electric tension in bodies, lightning, mariner's compass, horseshoe magnet, the telegraph, the dynamo. This partially qualitative study of forces and mechanical inventions has the educational 15 effect of enlightening the pupil, and emancipating him from the network of superstition that surrounds him in the child world, partly of necessity and partly by reason of the illiterate adults that he sometimes meets with in the persons of nurses, servants, and tradespeople, whose occupations have more 20 attraction for him than those of cultured people. The fairy world is a world of magic, of immediate interventions of supernatural spiritual beings, and while this is proper enough for the child up to the time of the school, and in a lessening degree for some time after, it is only negative and harmful in 25 adult manhood and womanhood. It produces arrested development of powers of observation and reflection in reference to phenomena, and stops the growth of the soul at the infantine stage of development. Neither is this infantine stage of wonder and magic more religious than the stage of disillusion 30 through the study of mathematics and physics. It is the arrest of religious development also, at the stage of fetichism. The highest religion, that of pure Christianity, sees in the world infinite mediations, all for the purpose of developing independent individuality; the perfection of human souls not 35 only in one kind of piety, namely that of the heart, but in the piety of the intellect that beholds truth, the piety of the will

that does good deeds wisely, the piety of the senses that sees the beautiful and realizes it in works of art. This is the Christian idea of divine Providence as contrasted with the heathen idea of that Providence, and the study of natural philosophy is an essential educational requisite in its attainment, although a negative means. Of course there is danger of replacing the spiritual idea of the divine by the dynamical or mechanical idea and thus arresting the mind at the stage of pantheism instead of fetichism. But this danger can be avoided by further education through secondary into higher education, whose entire spirit and method are comparative and philosophical in the best sense of the term. For higher education seems to have as its province the correlation of the several branches of human learning in the unity of the spiritual view furnished by religion to our civilization. By it one learns to see each branch, each science or art or discipline, in the light of all the others. This higher or comparative view is essential to any completeness of education, for it alone prevents the one-sidedness of hobbies, or "fads" as they are called in the slang of the day. It prevents also the bad effects that flow from the influence of what are termed "self-educated men," who for the most part carry up with them elementary methods of study, or at best, secondary methods, which accentuate the facts and relations of natural and spiritual phenomena, but do not deal with their higher correlations. The comparative method cannot, in fact, be well introduced until the student is somewhat advanced, and has already completed his elementary course of study dealing with the immediate aspects of the world, and his secondary course dealing with the separate formal and dynamical aspects that lie next in order behind the facts of first observation. Higher education in a measure unifies these separate formal and dynamic aspects, corrects their one-sidedness, and prevents the danger of what is so often noted in the self-educated men who unduly exaggerate some one of the subordinate aspects of the world and make it a sort of first principle.

Here your Committee finds in its way the question of the use of the full scientific method in the teaching of science in

the elementary school. The true method has been called the method of investigation, but that method as used by the child is only a sad caricature of the method used by the mature scientific man, who has long since passed through the fragmentary observation and reflection that prevail in the period of childhood, as well as the tendencies to exaggeration of the importance of one or another branch of knowledge at the expense of the higher unity that correlates all; an exaggeration that manifests itself in the possession and use of a hobby. The ideal scientific man has freed himself from obstacles of this kind, whether psychological or objective. What astronomical observers call the subjective coefficient must be ascertained and eliminated from the record that shows beginnings, endings, and rates. There is a possibility of perfect specialization in a scientific observer only after the elementary and secondary attitudes of mind have been outgrown. An attempt to force the child into the full scientific method by specialization would cause an arrest of his development in the other branches of human learning outside of his specialty. He could not properly inventory the data of his own special sphere unless he knew how to recognize the defining limits or boundaries that separate his province from its neighbors. The early days of science abounded in examples of confusion of provinces in the inventories of their data. It is difficult, even now, to decide where physics and chemistry leave off, and biology begins. 25

Your Committee does not attempt to state the exact proportion in which the child, at his various degrees of advancement, may be able to dispense with the guiding influence of teacher and text-book in his investigations, but they protest strongly against the illusion under which certain zealous advocates of the early introduction of scientific method seem to labor. They ignore in their zeal the deduction that is to be made for the guiding hand of the teacher, who silently furnishes to the child the experience that he lacks, and quietly directs his special attention to this or to that phase, and prevents him from hasty or false generalization as well as from undue exaggeration of single facts or principles. Here the teacher adds 35

the needed scientific outlook which the child lacks, but which the mature scientist possesses for himself.

It is contended by some that the scientific frame of mind is adapted only to science, but not to art, literature, and religion, which have something essential that science does not reach; not because of the incompleteness of the sciences themselves, but because of the attitude of the mind assumed in the observation of nature. In analytic investigation there is isolation of parts one from another, with a view to find the sources of the influences which produce the phenomena shown in the object. The mind brings everything to the test of this idea. Every phenomenon that exists comes from beyond itself, and analysis will be able to trace the source.

Now, this frame of mind, which insists on a foreign origin of all that goes to constitute an object, debars itself in advance from the province of religion, art, and literature as well as of philosophy. For self-determination, personal activity, is the first principle assumed by religion, and it is tacitly assumed by art and literature, Classic and Christian. The very definition of philosophy implies this, for it is the attempt to explain the world by the assumption of a first principle, and to show that all classes of objects imply that principle as ultimate presupposition. According to this view it is important not to attempt to hasten the use of a strictly scientific method on the part of the child. In his first years he is acquiring the results of civilization rather as an outfit of habits, usages, and traditions than as a scientific discovery. He cannot be expected to stand over against the culture of his time, and challenge one and all of its conventionalities to justify themselves before his reason. His reason is too weak. He is rather in the imitation stage of mind than in that of criticism. He will not reach the comparative or critical method until the era of higher education.

However this may be, it is clear that the educational value of science and its method is a very important question, and that on it depends the settlement of the question where specialization may begin. To commence the use of the real scientific method would imply a radical change also in methods

from the beginning. This may be realized by considering the hold which even the kindergarten retains upon symbolism and upon art and literature. But in the opinion of a majority of your Committee natural science itself should be approached, in the earliest years of the elementary school, rather in the 5 form of results with glimpses into the methods by which these results were reached. In the last two years (the seventh and eighth) there may be some strictness of scientific form and an exhibition of the method of discovery. The pupil, too, may to some extent put this method in practice himself. In 10 the secondary school there should be some laboratory work. But the pupil cannot be expected to acquire for himself fully the scientific method of dealing with nature until the second part of higher education—its post-graduate work. Nevertheless this good should be kept in view from the first year of the 15 elementary school, and there should be a gradual and continual approach to it.

In the study of general history appears another branch of the secondary course. History of the native land is assumed to be an elementary study. History of the world is certainly 20 a step further away from the experience of the child. It is held by some teachers to be in accordance with proper method to begin with the foreign relations of one's native land and to work outward to the world-history. The European relations involved in the discovery and colonization of America furnish 25 the only explanation to a multitude of questions that the pupil has started in the elementary school. He should move outward from what he has already learned, by the study of a new concentric circle of grounds and reasons, according to this view. This, however, is not the usual course taken. On beginning 30 secondary history the pupil is set back face to face with the period of tradition, just when historic traces first make their appearance. He is by this arrangement broken off from the part of history that he has become acquainted with and made to grapple with that period which has no relation to his previous 35 investigations. It is to be said, however, that general history lays stress on the religious thread of connection, though less now

than formerly. The world history is a conception of the great Christian thinker, St. Augustine, who held that the world and its history is a sort of antiphonic hymn in which God reads his counsels, and the earth and man read the responses. 5 He induced Orosius, his pupil, to sketch a general history in the spirit of his view. It was natural that the Old Testament histories, and especially the chapters of Genesis, should furnish the most striking part of its contents. This general history was connected with religion and brought closer to the 10 experience of the individual than the history of his own people. To commence history with the Garden of Eden, the Fall of Man, and the Noachian Deluge was to begin with what was most familiar to all minds, and most instructive, because it concerned most nearly the conduct of life. Thus religion fur- 15 nished the apperceptive material by which the early portions of history were recognized, classified, and made a part of experience.

Now that studies in archæology, especially those in the Nile and Euphrates valleys, are changing the chronologies and the records of early times and adding new records of the past, 20 bringing to light national movements and collisions of peoples, together with data by which to determine the status of their industrial civilization, their religious ideas, and the form of their literature and art, the concentric arrangement of all this material around the history of the chosen people as a nucleus 25 is no longer possible. The question has arisen, therefore, whether general history should not be rearranged for the secondary school, and made to connect with American history for apperceptive material rather than with Old Testament history. To this it has been replied with force that the idea 30 of a world history, as St. Augustine conceived it, is the noblest educative ideal ever connected with the subject of history. Future versions of general history will not desert this standpoint, we are told, even if they take as their basis that of ethnology and anthropology, for these, too, will exhibit a plan 35 in human history—an educative principle that leads nations toward freedom and science, because the Creator of nature has made it, in its fundamental constitution, an evolution or

progressive development of individuality. Thus the idea of divine Providence is retained, though made more comprehensive by bringing the whole content of natural laws within his will as his method of work.

These considerations, we are reminded by the partisans of 5 humanity studies, point back to the educative value of history as corrective of the one-sidedness of the method of science. Science seeks explanation in the mechanical conditions of, and impulses received from, the environment, while history keeps its gaze fixed on human purposes, and studies the genesis of 10 national actions through the previous stages of feelings, convictions, and conscious ideas. In history the pupil has for his object self-activity, reaction against environment, instead of mechanism, or activity through another.

The history of English literature is another study of the 15 secondary school. It is very properly placed beyond the elementary school, for as taught it consists largely of the biographies of men of letters. The pupils who have not yet learned any great work of literature should not be pestered with literary biography, for at that stage the greatness of the 20 men of letters cannot be seen. Plutarch makes great biographies because he shows heroic struggles and great deeds. The heroism of artists and poets consists in sacrificing all for the sake of their creations. The majority of them come off sadly at the hands of the biographer, for the reason that the very 25 sides of their lives are described which they had slighted and neglected for the sake of the Muses. The prophets of Israel did not live in city palaces, but in caves; they did not wear fine raiment, nor feed sumptuously, nor conform to the codes of polite society. They were no courtiers when they approached 30 the king. They neglected all the other institutions—family, productive industry, and state—for the sake of one, the Church, and even that not the established ceremonial of the people, but a higher and more direct communing with Jehovah. So with artists and men of letters it is more or less the case that 35 the institutional side of their lives is neglected, or unsymmetrical, or if this is not the case it will be found prosaic and

uneventful, throwing no light on their matchless productions.

For these reasons should not the present use of literary biography as it exists in secondary schools, and is gradually making its way into elementary schools, be discouraged, and the time now given to it devoted to the study of literary works of art? It will be admitted that the exposure of the foibles of artists has an immoral tendency on youth: for example, one affects to be a poet, and justifies laxity and self-indulgence through the example of Byron. Those who support this view hold that we should not dignify the immoral and defective side of life by making it a branch of study in school.

Correlation by synthesis of studies

Your Committee would mention another sense in which the expression correlation of studies is sometimes used. It is held by advocates of an artificial center of the course of study. They use, for example, De Foe's Robinson Crusoe for a reading exercise, and connect with it the lessons in geography and arithmetic. It has been pointed out by critics of this method that there is always danger of covering up the literary features of the reading matter under accessories of mathematics and natural science. If the material for other branches is to be sought for in connection with the literary exercise, it will distract the attention from the poetic unity. On the other hand, arithmetic and geography cannot be unfolded freely and comprehensively if they are to wait on the opportunities afforded in a poem or novel for their development. A correlation of this kind, instead of being a deeper correlation such as is found in all parts of human learning by the studies of the college and university, is rather a shallow and uninteresting kind of correlation that reminds one of the system of mnemonics, or artificial memory, which neglects the association of facts and events with their causes and the history of their evolution, and looks for unessential quips, puns, or accidental suggestions with a view to strengthening the memory. The effect of this is to weaken the power of systematic thinking which deals with

essential relations, and substitute for it a chaotic memory that ties together things through false and seeming relations, not of the things and events, but of the words that denote them. *subjoined*

The correlation of geography and arithmetic and history in and through the unity of a work of fiction is at best an artificial correlation, which will stand in the way of the true objective correlation. It is a temporary scaffolding made for school purposes. Instruction should avoid such temporary structures as much as possible, and when used they should be only used for the day, and not for the year, because of the danger of building up an apperceptive center in the child's mind that will not harmonize with the true apperceptive center required by the civilization. The story of Robinson Crusoe has intense interest to the child as a lesson in sociology, showing him the helplessness of isolated man and the reinforcement that comes to him through society. It shows the importance of the division of labor. All children should read this book in the later years of the elementary course, and a few profitable discussions may be had in school regarding its significance. But De Foe painted in it only the side of adventure that he found in his countrymen in his epoch, England after the defeat of the Armada having taken up a career of conquest on the seas, ending by colonization and a world commerce. The liking for adventure continues to this day among all Anglo-Saxon peoples, and beyond other nationalities there is in English-speaking populations a delight in building up civilization from the very foundation. This is only, however, one phase of the Anglo-Saxon mind. Consequently the history of Crusoe is not a proper center for a year's study in school. It omits cities, governments, the world commerce, the international process, the Church, the newspaper and book from view, and they are not even reflected in it.

Your Committee would call attention in this connection to the importance of the pedagogical principle of analysis and isolation as preceding synthesis and correlation. There should be rigid isolation of the elements of each branch for the purpose of getting a clear conception of what is individual and peculiar in a

special province of learning. Otherwise one will not gain from each its special contribution to the whole. That there is some danger from the kind of correlation that essays to teach all branches in each will be apparent from this point of view.

III. THE SCHOOL PROGRAMME

5 In order to find a place in the elementary school for the several branches recommended in this report, it will be necessary to use economically the time allotted for the school term, which is about two hundred days, exclusive of vacations and holidays. Five days per week and five hours of actual
10 school work or a little less per day, after excluding recesses for recreation, give about twenty-five hours per week. There should be, as far as possible, alternation of study-hours and recitations (the word recitation being used in the United States for class exercise or lesson conducted by the teacher
15 and requiring the critical attention of the entire class). Those studies requiring the clearest thought should be taken up, as a usual thing, in the morning session, say arithmetic the second half hour of the morning and grammar the half-hour next succeeding the morning recess for recreation in the open air.
20 By some who are anxious to prevent study at home, or at least to control its amount, it is thought advisable to place the arithmetic lesson after the grammar lesson, so that the study learned at home will be grammar instead of arithmetic. It is found by experience that if mathematical problems are taken
25 home for solution two bad habits arise, namely, in one case, the pupil gets assistance from his parents or others, and thereby loses to some extent his own power of overcoming difficulties by brave and persistent attacks unaided by others; the other evil is a habit of consuming long hours in the preparation of a
30 lesson that should be prepared in thirty minutes, if all the powers of mind are fresh and at command. An average child may spend three hours in the preparation of an arithmetic lesson. Indeed, in repeated efforts to solve one of the so-called "conundrums," a whole family may spend the entire
35 evening. One of the unpleasant results of the next day is

that the teacher who conducts the lesson never knows the exact capacity and rate of progress of his pupils; in the recitation he probes the knowledge and preparation of the pupil, plus an unknown amount of preparatory work borrowed from parents and others. He even increases the length of the lessons, and requires more work at home, when the amount already exceeds the unaided capacity of the pupil. 5

The lessons should be arranged so as to bring in such exercises as furnish relief from intellectual tension between others that make large demands on the thinking powers. Such exercises as singing and calisthenics, writing and drawing, also reading, are of the nature of a relief from those recitations that tax the memory, critical alertness, and introspection, like arithmetic, grammar, and history.

Your Committee has not been able to agree on the question whether pupils who leave school early should have a course of study different from the course of those who are to continue on into secondary and higher work. It is contended, on the one hand, that those who leave early should have a more practical course, and that they should dispense with those studies that seem to be in the nature of preparatory work for secondary and higher education. Such studies as algebra and Latin, for example, should not be taken up unless the pupil expects to pursue the same for a sufficient time to complete the secondary course. It is replied, on the other hand, that it is best to have one course for all, because any school education is at best but an initiation for the pupil into the art of learning, and that wherever he leaves off in his school course he should continue, by the aid of the public library and home study, in the work of mastering science and literature. It is further contended that a brief course in higher studies, like Latin and algebra, instead of being useless, is of more value than any elementary studies that might replace them. The first ten lessons in algebra give the pupil the fundamental idea of the general expression of arithmetical solutions by means of letters and other symbols. Six months' study of it gives him the power to use the method in stating the manifold con- 35

ditions of a problem in partnership, or in ascertaining a value that depends on several transformations of the data given. It is claimed, indeed, that the first few lessons in any branch are relatively of more educational value than an equal number of
5 subsequent lessons, because the fundamental ideas and principles of the new study are placed at the beginning. In Latin, for instance, the pupil learns in his first week's study the to him strange phenomenon of a language that performs by inflections what his own language performs by the use of pre-
10 positions and auxiliaries. He is still more surprised to find that the order of words in a sentence is altogether different in Roman usage from that to which he is accustomed. He further begins to recognize in the Latin words many roots or stems which are employed to denote immediate sensuous objects,
15 while they have been adopted into his English tongue to signify fine shades of distinction in thought or feeling. By these three things his powers of observation in matters of language are armed, as it were, with new faculties. Nothing that he has hitherto learned in grammar is so radical and far-
20 reaching as what he learns in his first week's study of Latin. The Latin arrangement of words in a sentence indicates a different order of mental arrangement in the process of apprehension and expression of thought. This arrangement is rendered possible by declensions. This amounts to attaching
25 prepositions to the ends of the words, which they thus convert into adjectival or adverbial modifiers; whereas the separate prepositions of the English must indicate by their position in the sentence their grammatical relation. These observations, and the new insight into the etymology of English words hav-
30 ing a Latin derivation, are of the nature of mental seeds which will grow and bear fruit throughout life in the better command of one's native tongue. All this will come from a very brief time devoted to Latin in school.

Amount of time for each branch

Your Committee recommends that an hour of sixty minutes
35 each week be assigned in the programme for each of the fol-

lowing subjects throughout the eight years: physical culture, vocal music, oral lessons in natural science (hygiene to be included among the topics under this head), oral lessons in biography and general history, and that the same amount of time each week shall be devoted to drawing from the second 5 year to the eighth inclusive; to manual training during the seventh and eighth years so as to include sewing and cookery for the girls, and work in wood and iron for the boys.

Your Committee recommends that reading be given at least one lesson each day for the entire eight years, it being under-10 stood, however, that there shall be two or more lessons each day in reading in the first and second years, in which the recitation is necessarily very short, because of the inability of the pupil to give continued close attention, and because he has little power of applying himself to the work of preparing lessons by him-15 self. In the first three years the reading should be limited to pieces in the colloquial style, but selections from the classics of the language in prose and in poetry shall be read to the pupil from time to time, and discussions made of such features of the selections read as may interest the pupils. After the 20 third year your Committee believes that the reading lesson should be given to selections from classic authors of English, and that the work of the recitation should be divided between (a) the elocution, (b) the grammatical peculiarities of the language, including spelling, definitions, syntactical construction, 25 punctuation, and figures of prosody, and (c) the literary contents, including the main and accessory ideas, the emotions painted, the deeds described, the devices of style to produce a strong impression on the reader. Your Committee wishes to lay emphasis on the importance of the last item,—that of literary 30 study,—which should consume more and more of the time of the recitation from grade to grade in the period from the fourth to the eighth year. In the fourth year and previously the first item—that of elocution, to secure distinct enunciation and correct pronunciation—should be most prominent. In the 35 fifth and sixth years the second item—that of spelling, defining, and punctuation—should predominate slightly over the

other two items. In the years from the fifth to the eighth there should be some reading of entire stories, such as *Gulliver's Travels*, *Robinson Crusoe*, *Rip Van Winkle*, *The Lady of the Lake*, *Hiawatha*, and similar stories adapted in style and subject-matter to the capacity of the pupils. An hour should be devoted each week to conversations on the salient points of the story, its literary and ethical bearings.

Your Committee agrees in the opinion that in teaching language care should be taken that the pupil practices much in writing exercises and original compositions. At first the pupil will use only his colloquial vocabulary, but as he gains command of the technical vocabularies of geography, arithmetic, and history, and learns the higher literary vocabulary of his language, he will extend his use of words accordingly. Daily from the first year the child will prepare some lesson or portion of a lesson in writing. Your Committee has included under the head of oral grammar (from the first to the middle of the fifth year) one phase of this written work devoted to the study of the literary form and the technicalities of composition in such exercises as letter writing, written reviews of the several branches studied, reports of the oral lessons in natural science and history, paraphrases of the poems and prose literature of the readers, and finally compositions or written essays on suitable themes assigned by the teacher, but selected from the fields of knowledge studied in school. Care should be taken to criticise all paraphrases of poetry in respect to the good or bad taste shown in the choice of words; parodies should never be permitted.

It is thought by your Committee that the old style of composition writing was too formal. It was kept too far away from the other work of the pupil. Instead of giving a written account of what he had learned in arithmetic, geography, grammar, history, and natural science, the pupil attempted artificial descriptions and reflections on such subjects as "Spring," "Happiness," "Perseverance," "Friendship," or something else outside of the line of his school studies.

Your Committee has already expressed its opinion that

a good English style is not to be acquired by the study of grammar so much as by familiarity with great masterpieces of literature. We especially recommend that pupils who have taken up the fourth and fifth readers, containing the selections from great authors, should often be required to 5 make written paraphrases of prose or poetic models of style, using their own vocabulary to express the thoughts so far as possible, and borrowing the *recherche* words and phrases of the author, where their own resources fail them. In this way the pupil learns to see what the great author has done to en-10 rich the language and to furnish adequate means of expression for what could not be presented in words before, or at least not in so happy a manner.

Your Committee believes that every recitation is, in one aspect of it, an attempt to express the thoughts and informa-15 tion of the lesson in the pupil's own words, and thus an initial exercise in composition. The regular weekly written review of the important topics in the several branches studied is a more elaborate exercise in composition, the pupil endeavoring to collect what he knows and to state it systematically and 20 in proper language. The punctuation, spelling, syntax, penmanship, choice of words, and style should not, it is true, be made a matter of criticism in connection with the other lessons, but only in the language lesson proper. But the pupil will learn language, all the same, by the written and oral recitations. The 25 oral grammar lessons from the first year to the middle of the fifth year, should deal chiefly with the use of language, gradually introducing the grammatical technique as it is needed to describe accurately the correct forms and the usages violated.

Your Committee believes that there is some danger of wast-30 ing the time of the pupil in these oral and written language lessons in the first four years by confining the work of the pupil to the expression of ordinary commonplace ideas not related to the subjects of his other lessons, especially when the expression is confined to the colloquial vocabulary. Such 35 training has been severely and justly condemned as teaching what is called prating or gabbling, rather than a noble use of

English speech. It is clear that the pupil should have a dignified and worthy subject of composition, and what is so good for his purpose as the themes he has tried to master in his regular lessons? The reading lessons will give matter for literary style, the geography for scientific style, and the arithmetic for a business style ; for all styles should be learned.

Your Committee recommends that selected lists of words difficult to spell be made from the reading lessons and mastered by frequent writing and oral spelling during the fourth, fifth, and sixth years.

Your Committee recommends that the use of a text-book in grammar begin with the second half of the fifth year, and continue until the beginning of the study of Latin in the eighth grade, and that one daily lesson of twenty-five or thirty minutes be devoted to it.

For Latin we recommend one daily lesson of thirty minutes for the eighth year. For arithmetic we recommend number work from the first year to the eighth, one lesson each day, but the use of the text-book in number should not, in our opinion, begin until the first quarter of the third year. We recommend that the applications of elementary algebra to arithmetic, as hereinbefore explained, be substituted for pure arithmetic in the seventh and eighth years, a daily lesson being given.

Your Committee recommends that penmanship as a separate branch be taught in the first six years at least three lessons per week.

Geography, in the opinion of your Committee, should begin with oral lessons in the second year, and with a text-book in the third quarter of the third year, and be continued to the close of the sixth year with one lesson each day, and in the seventh and eighth years with three lessons per week.

History of the United States with the use of a text-book, your Committee recommends for the seventh and the first half of the eighth year, one lesson each day ; the Constitution of the United States for the third quarter of the eighth year.

The following schedule will show the number of lessons per week for each quarter of each year :

- Reading. Eight years, with daily lessons.
- Penmanship. Six years, ten lessons per week for first two years, five for third and fourth, and three for fifth and sixth.
- Spelling Lists. Fourth, fifth, and sixth years, four lessons per week.
- Grammar. Oral, with composition or dictation, first year to middle of fifth 5
year, text-book from middle of fifth year to close of seventh year, five
lessons per week. (Composition writing should be included under this
head. But the written examinations on the several branches should be
counted under the head of composition work.)
- Latin or French or German. Eighth year, five lessons per week. 10
- Arithmetic. Oral first and second year, text-book third to sixth year, five
lessons per week.
- Algebra. Seventh and eighth year, five lessons per week.
- Geography. Oral lessons second year to middle of third year, text-book
from middle of third year, five lessons weekly to seventh year, and three 15
lessons to close of eighth.
- Natural Science and Hygiene. Sixty minutes per week, eight years.
- History of United States. Five hours per week seventh year and first half
of eighth year.
- Constitution of United States. Third quarter in the eighth year. 20
- General History and Biography. Oral lessons, sixty minutes a week, eight
years.
- Physical Culture. Sixty minutes a week, eight years.
- Vocal Music. Sixty minutes a week, eight years.
- Drawing. Sixty minutes a week, eight years. 25
- Manual Training, Sewing and Cooking. One-half day each week in sev-
enth and eighth years.

Your Committee recommends recitations of fifteen minutes in length in the first and second years, of twenty minutes in length in the third and fourth years, of twenty-five minutes in the fifth 30 and sixth years, and of thirty minutes in the seventh and eighth.

The results of this programme show for the first and second years twenty lessons a week of fifteen minutes each, besides seven other exercises occupying an average of twelve minutes apiece each day; the total amount of time occupied in the continuous 35 attention of the recitation or class exercises being twelve hours, or an average of two hours and twenty-four minutes per day.

For the third year twenty lessons a week of twenty minutes each, and five general exercises taking up five hours a week or an average of one hour per day, giving an average time per day of 40 two hours and twenty minutes for class recitations or exercises.

In the fourth the recitations increase to twenty-four (by reason of four extra lessons in spelling) and the time occupied

in recitations and exercises to thirteen hours and an average per day of two hours thirty-six minutes.

BRANCHES	1st year	2d year	3d year	4th year	5th year	6th year	7th year	8th year
Reading.....	10 lessons a week		5 lessons a week					
Writing	10 lessons a week		5 lessons a week		3 lessons a week			
Spelling lists...				4 lessons a week				
English Grammar	Oral, with composition lessons					5 lessons a week with text book		
Latin								5 lessons
Arithmetic	Oral, 60 minutes a week		5 lessons a week with text-book					
Algebra							5 lessons a week	
Geography.....	Oral, 60 minutes a week		* 5 lessons a week with text-book				3 lessons a week	
Natural Science + Hygiene.	Sixty minutes a week							
U. S. History..							5 lessons a week	
U. S. Constitution								* 5 les.
General History	Oral, sixty minutes a week							
Physical Culture	Sixty minutes a week							
Vocal Music...	Sixty minutes a week divided into 4 lessons							
Drawing	Sixty minutes a week							
Manual Train. or Sewing + Cookery.							One-half day each	
No. of Lessons	20+7 daily exer.	20+7 daily exer.	20+5 daily exer.	24+5 daily exer.	27+5 daily exer.	27+5 daily exer.	23+6 daily exer.	23+6 daily exer.
Total Hours of Recitations	12	12	11½	13	16½	16½	17½	17½
Length of Recitions	15 min.	15 min.	20 min.	20 min.	25 min.	25 min.	30 min.	30 min.

* Begins in second half year

In the fifth and sixth years the number of recitations increases to twenty-seven per week, owing to the addition of

formal grammar, and the total number of hours required for all is $16\frac{1}{4}$ per week, or an average of $3\frac{1}{4}$ per day.

In the seventh and eighth years the number of lessons decreases to twenty-three, history being added, penmanship and special lessons in spelling discontinued, the time devoted to geography reduced to three lessons a week. But the recitation is increased to thirty minutes in length. Manual training occupies a half-day, or $2\frac{1}{2}$ hours, each week. The total is 19 hours per week or $3\frac{3}{4}$ per day.

The foregoing tabular exhibit shows all of these particulars. 16

IV. METHODS AND ORGANIZATION

Your Committee is agreed that the time devoted to the elementary school work should not be reduced from eight years, but they have recommended, as hereinbefore stated, that in the seventh and eighth years a modified form of algebra be introduced in place of advanced arithmetic, and that in the 15 eighth year English grammar yield place to Latin. This makes, in their opinion, a proper transition to the studies of the secondary school and is calculated to assist the pupil materially in his preparation for that work. Hitherto, the change from the work of the elementary school has been too 20 abrupt, the pupil beginning three formal studies at once, namely algebra, physical geography, and Latin.

Your Committee has found it necessary to discuss the question of methods of teaching in numerous instances, while considering the question of educational values and programmes, 25 because the value and time of beginning of the several branches depends so largely on the method of teaching.

The following recommendations, however, remain for this part of their report:

They would recommend that the specialization of teachers' 30 work should not be attempted before the seventh or eighth year of the elementary school and in not more than one or two studies then. In the secondary school it is expected that a teacher will teach one or at most two branches. In the elementary school, for at least six years, it is better, on the whole, 35

to have each teacher instruct his pupils in all the branches that they study, for the reason that only in this way can he hold an even pressure on the requirements of work, correlating it in such a manner that no one study absorbs undue attention. In this way the pupils prepare all their lessons under the direct supervision of the same teacher, and by their recitations show what defects of methods of study there have been in the preparation.

The ethical training is much more successful under this plan, because the personal influence of a teacher is much greater when he or she knows minutely the entire scope of the school work. In the case of the special teacher the responsibility is divided and the opportunities of special acquaintance with character and habits diminished.

With one teacher, who supervises the study and hears all the recitations, there is a much better opportunity to cultivate the two kinds of attention. The teacher divides his pupils into two classes and hears one recite while the other class prepares for the next lesson. The pupils reciting are required to pay strict attention to the one of their number who is explaining the point assigned him by the teacher—they are to be on the alert to notice any mistakes of statement or omissions of important data, they are at the same time to pay close attention to the remarks of the teacher. This is one kind of attention, which may be called associated critical attention. The pupils engaged in the preparation of the next lesson are busy, each one by himself, studying the book and mastering its facts and ideas, and comparing them one with another, and making the effort to become oblivious of their fellow-pupils, the recitation going on, and the teacher. This is another kind of attention, which is not associated, but an individual effort to master for one's self without aid a prescribed task and to resist all distracting influences. These two disciplines in attention are the best formal training that the school affords.

Your Committee has already mentioned a species of faulty correlation wherein the attempt is made to study all branches in each, misapplying Jacotot's maxim, "all is in all" (*tout est dans tout*).

A frequent error of this kind is the practice of making every recitation a language lesson, and interrupting the arithmetic, geography, history, literature, or whatever it may be, by calling the pupil's attention abruptly to something in his forms of expression, his pronunciation, or to some faulty use of English ; 5 thus turning the entire system of school work into a series of grammar exercises and weakening the power of continuous thought on the objective contents of the several branches, by creating a pernicious habit of self-consciousness in the matter of verbal expression. While your Committee would not venture 10 to say that there should not be some degree of attention to the verbal expression in all lessons, it is of the opinion that it should be limited to criticism of the recitation for its want of technical accuracy. The technical words in each branch should be discussed until the pupil is familiar with their full force. The 15 faulty English should be criticised as showing confusion of thought or memory, and should be corrected in this sense. But solecisms of speech should be silently noted by the teacher for discussion in the regular language lesson.

The question of promotion of pupils has occupied from time 20 to time very much attention. Your Committee believes that in many systems of elementary schools, there is injury done by too much formality in ascertaining whether the pupils of a given class have completed the work up to a given arbitrarily fixed point, and are ready to take up the next apportionment 25 of the work. In the early days of city school systems, when the office of superintendent was first created, it was thought necessary to divide up the graded course of study into years of work, and to hold stated annual examinations to ascertain how many pupils could be promoted to the next grade or 30 year's work. All that failed at this examination were set back at the beginning of the year's work to spend another year in reviewing it. This was to meet the convenience of the superintendent who, it was said, could not hold examinations to suit the wants of individuals or particular classes. From this arrange- 35 ment there naturally resulted a great deal of what is called "marking time." Pupils who had nearly completed the work of

the year were placed with pupils who had been till now a year's interval below them. Discouragement and demoralization at the thought of taking up again a course of lessons learned once before caused many pupils to leave school prematurely.

5 This evil has been remedied in nearly one-half of the cities by promoting pupils whenever they have completed the work of a grade. The constant tendency of classification to become imperfect by reason of the difference in rates of advancement of the several pupils, owing to disparity in ages, degree of
10 maturity, temperament, and health, makes frequent reclassification necessary. This is easily accomplished by promoting the few pupils who distance the majority of their classmates into the next class above, separated as it is or ought to be, by an interval of less than half a year. The bright pupils thus pro-
15 moted have to struggle to make up the ground covered in the interval between the two classes, but they are nearly always able to accomplish this, and generally will in two years' time need another promotion from class to class.

The procrustean character of the old city systems has been
20 removed by this device.

There remain for mention some other evils besides bad systems of promotion due to defects of organization. The school buildings are often with superstitious care kept apart exclusively for particular grades of pupils. The central build-
25 ing erected for high school purposes, though only half filled, is not made to relieve the neighboring grammar school, crowded to such a degree that it cannot receive the classes which ought to be promoted from the primary schools. It has happened in such cases that this superstition prevailed so
30 far that the pupils in the primary school building were kept at work on studies already finished, because they could not be transferred to the grammar school.

In all good school systems the pupils take up new work when they have completed the old, and the bright pupils are
35 transferred to higher classes when they have so far distanced their fellows that the amount of work fixed for the average ability of the class does not give them enough to do.

In conclusion your Committee would state, by way of explanation, that it has been led into many digressions, in illustrating the details of its recommendations in this report, through its desire to make clear the grounds on which it has based its conclusions and through the hope that such 5 details will call out a still more thorough-going discussion of the educational values of branches proposed for elementary schools, and of the methods by which those branches may be successfully taught.

With a view to increase the interest in this subject your 10 Committee recommends the publication of selected passages from the papers sent in by invited auxiliary committees and by volunteers, many of these containing valuable suggestions not mentioned in this report.

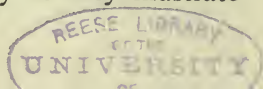
WILLIAM T. HARRIS, *Chairman*

United States Commissioner of Education, Washington, D. C.

I dissent from the majority report of the Committee in 15 regard to the following points :

Arithmetic

1. *As to fractions* : In teaching arithmetic there does not exist any greater difficulty in getting small children to grasp the nature of the fraction as such than in getting them to grasp the idea of the simpler whole numbers. It is true that 20 the fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, etc., as symbols, are a little more complex than are the single digits; but as to the real meaning, when once the fractional idea has been properly developed by the teacher and the significance of the idea apprehended by the pupil, it is as easily understood as any 25 other simple truth. Children get the idea of *half*, *third*, or *quarter* of many things long before they enter school, and they will as readily learn to add, subtract, multiply, and divide fractions as they will whole numbers. In using fractions they will draw diagrams and pictures representing 30 the processes of work as quickly and easily as they illustrate



similar work with integers. It is of course assumed that the teacher knows how to teach arithmetic to children, or rather, how to teach the children how to teach themselves. There is really no valid argument why children in the second, 5 third, and fourth years in school should not master the fundamental operations in fractions. Not only this, they will put the more common fractions into the technique of percentage, and do this as well in the second and third grades as at any other time in their future progress. There is only one 10 new idea involved in this operation, and that consists in giving an additional term—per cent.—to the fractional symbol. When one number is a part of another, it may be regarded as a fractional part or as such a per cent. of it. A great deal of percentage is thus learned by the pupils early in the course. 15 Children are not hurt by learning. Standing still and lost motion kill.

Every recitation should reach the full swing of the learner's mind, including all his acquisitions on any given topic. But if the teaching of fractions be deferred, as it usually is in most 20 schools, the time may be materially shortened by teaching addition and subtraction of fractions together. This is simple enough if different fractions having common denominators are used at first, such as $\frac{2}{5} + \frac{3}{5} = ?$, and $\frac{4}{5} - \frac{1}{5} = ?$ Then the next step, after sufficient drill on this case, is to take two fractions 25 (simple) of different units of value, as $\frac{1}{2} + \frac{1}{3} = ?$, and $\frac{1}{2} - \frac{1}{3} = ?$ Multiplication and division may be treated similarly.

In decimals, the pupil is really confronted by a simpler form of fractions than the varied forms of common fractions.

30 Devices and illustrations of a material kind are necessary to build up in the pupil's mind at the beginning a clear concept of a tenth, etc., etc., and then to show that *one-tenth* written as a decimal is only a shorthand way of writing $\frac{1}{10}$ as a common fraction, and so on. He sees very soon that the deci- 35 mal is only a shorthand common fraction, and this notion he must hold to. This is the vital point in decimals. The idea that they can be changed into common fractions and

the reverse at will, establishes the fact in the pupil's mind that they are common fractions and not uncommon ones. Fixing the decimal point will, in a short time, take care of itself.

In teaching arithmetic the steps are: (1) developing the subject till each pupil gets a clear conception of it; (2) necessary drill to fix the process; (3) connecting the subject with all that has preceded it; (4) its applications; (5) the pupil's ability to sum up clearly and concisely what he has learned.

10

2. *As to abridgment*: Under this head, I hold that a course in arithmetic, including simple numbers, fractions, tables of weights and measures, percentage and interest, and numerical operations in powers, does not fit a pupil to begin the study of algebra. That while he may carry the book under his arm to the schoolroom, he is too poorly equipped to make headway on this subject, and instead of finishing up algebra in a reasonable length of time he is kept too long at it, with a strong probability of his becoming disgusted with it.

There are subjects, however, in the common school arithmetic that may be dropped out with great advantage, to wit, all but the simplest exercises in compound interest, foreign exchange, all foreign moneys (except reference tables of values), annuities, alligation, progression; and the entire subjects of percentage and interest should be condensed into about twenty pages.

Cancellation, factoring, proportion, evolution, and involution should be retained. Cancellation and factoring should be strongly emphasized owing to their immense value in shortening work in arithmetic, algebra, and in more advanced subjects. Some drill in the Metric System should not be omitted.

3. *As to mental arithmetic*: Till the end of the fourth year the pupil does not need a text-book of mental arithmetic. So far his work in arithmetic should be about equally divided between written and mental. At the beginning of the fifth year, in addition to his written arithmetic, he should begin a

mental arithmetic and continue it three years, reciting at least four mental arithmetic lessons each week. The length of the recitation should be twenty minutes. A pupil well drilled in mental arithmetic at the end of the seventh year, if the school age begins at six, is far better prepared to study algebra than the one who has not had such a drill. There are a few problems in arithmetic that can be solved more easily by algebra than by the ordinary processes of arithmetic, but there are many numerical problems in equations of the first degree that can be more easily handled by mental arithmetic than by algebra. To attack arithmetical problems by algebra is very much like using a tremendous lever to lift a feather. Those who have found a great stumbling-block in arithmetical "conundrums," have, if the inside facts were known, been looking in the wrong direction. A deficiency of "number-brain-cells" will afford an adequate explanation.

4. *Rearrangement of subjects:* There should be a rearranging of the topics in arithmetic so that one subject naturally leads up to the next. As an illustration, it is easily seen that whole numbers and fractions can be treated together, and that with United States money, when the *dime* is reached, is the proper time to begin decimals, and that when "a square" in surface measure first comes up, the next step is the *square* of a number as well as its *square root*, and that solid measure logically lands the learner among cubes and cube-roots. When he learns that 1728 cubic inches make one cubic foot he is prepared to find the edge of the cube. What is meant here is pointing the way to the next above. All depends upon the teacher's ability to lead the pupil to see conditions and relations. My contention is that truth, so far as one is capable of taking hold of it when it is properly presented, is always a simple affair.

5. *As to algebra:* If algebra be commenced at the middle of the seventh year, let the pupil go at it in earnest, and keep at it till he has mastered it. Here the best opportunities will be afforded him to connect his algebraic knowledge to his arithmetical knowledge. He builds the one on top of the other.

The skillful teacher always insists that the learner shall establish and maintain this relationship between the two subjects. To switch around the other way appears to me to be the same as to omit certain exercises in the common algebra, because they are more briefly and elegantly treated in the calculus. It is admitted that a higher branch of mathematics often throws much light on the lower branches, but these side-lights should be employed for the purpose of leading the learner onward to broader generalizations. Unless one sees the lower clearly, the higher is obscure. Build solidly the foundation on arithmetic—written and mental—and the higher branches will be more easily mastered and time saved.

History of the United States

In teaching this branch in the public schools, there does not appear, so far as I can see, any substantial reason why the pupils should not study and recite the history of the Rebellion in the same manner that they do the Revolutionary War. The pupils discuss the late war and the causes that led to it with an impartiality of feeling that speaks more for their good sense and clear judgment than any other way by which their knowledge can be tested. They may not get hold of all the causes involved in that conflict, but they get enough to understand the motives which caused the armies to fight so heroically, and why the people, both North and South, staked everything on the issue. Just as the men who faced each other for four years and met so often in a death grapple will sit down now and quietly talk over their trials, sufferings, and conflicts, so do their children talk over these same stirring scenes. They, too, so far as my experience extends, are singularly free from bitterness and prejudice. It is certainly a period of history that they should study.

30

The spelling-book

In addition to the "spelling-lists," I would supplement with a good spelling-book. So far, no "word-list," however

well selected, has supplied the place of a spelling-book. All those schools that threw out the spelling-book and undertook to teach spelling incidentally or by word-lists failed, and for the same reason that grammar, arithmetic, geography, and other branches, cannot be taught incidentally as the pupil or the class reads Robinson Crusoe, or any other similar work. It is an independent study and as such should be pursued.

JAMES M. GREENWOOD,
Superintendent of Schools, Kansas City, Mo.

While affixing my signature to the report of this Committee as expressing substantial agreement with most of its leading propositions, I beg leave also to indicate my dissent from certain of its recommendations and to suggest certain additions which, in my judgment, the report requires.

1. There are other forms of true correlation which should be included with the four mentioned in the first part of the report and which should be as clearly and fully treated as are these four.

The first is that form of correlation which is popularly understood by the name, and which is also called by some writers, concentration, co-ordination, unification, and alludes in general to a division of studies into content and form; by content meaning that upon which it is fitting that the mind of the child should dwell, and by form the means or modes of expression by which thoughts are communicated. Or, it may be thus expressed: The true content of education is, (1), philosophy or the knowledge of man as to his motives and hidden springs of action indicated in history and literature, and (2), science, the knowledge of nature and its manifestations and laws. Its form is art, which is the deliberate, purposeful, and effective expression to others of that which has been produced within man by contact with other men and with nature, and is commonly referred to as divided into various arts, such as reading, writing, drawing, making, and modeling. The relation of content and form is that of principle and subordinate, the

latter receiving its chief value from the former. In a true education they are so presented to the mind of the child that he instinctively and unconsciously grasps this relation and is thereby lifted into a higher plane of thinking and living than if the various arts are taught, as they too commonly are, without reference to a noble content. This relation of form to content is vaguely referred to in the report, but nowhere definitely treated. It seems to me that it is a true form of correlation, and, as such, deserves special and definite treatment. Moreover, it is at present much in the minds of the teachers of this country, often in forms that are misleading and harmful. The fact that it adds the important element of interest to the dry details of common school life makes it especially attractive to progressive and earnest teachers, and this Committee should recognize its importance and make such an utterance upon it as will guide the average teacher to a clear comprehension of its meaning and to a wise use of it in the schoolroom.

Second, there is a still higher form of correlation which is definitely referred to later in the report as that "of the several branches of human learning in the unity of the spiritual view furnished by religion to our civilization." This in the report is assigned absolutely to the province of higher education. While I do not wish to dissent wholly from this view, since it is doubtless true that this higher unity cannot be comprehensively stated for the use of a child, yet a wise teacher can so present subjects to even a young child that a sense of the unity of all knowledge will, to a certain degree, be unconsciously developed in his mind. In regard to certain of the great divisions of human knowledge, this relation is so evident that they cannot be properly presented at all unless the relation be made clear. Such studies are history and geography.

2. The recommendations upon the subject of language should be broadened to cover the production of good English by the child himself, with the suggestion of suitable topics and proper methods. This report confines itself to the absorptive side of education and ignores that development of power over

nature, man, and self, which comes from free exercise of faculties and free expression of thought. The study of language as something for the child to use himself, the great means by which he is to assert his place in civilization, and exert his influence for good, is nowhere referred to except in the vaguest way. This statement in regard to language applies almost equally well to drawing, and here is made evident the importance of the form of correlation to which I have just referred. The proper material for the training of the child in expression is that which is furnished by the study of man and nature. His mind being filled with high themes, he asserts his individuality, expresses himself in regard to them, and thereby gains at once both a closer and clearer comprehension of what he has studied, and also the power by which he may become a factor in his generation.

3. I would wish to omit the word "weekly" where it occurs in the discussion of the subjects of general history and science, unless it be understood to mean that an amount of time in the school year equivalent to sixty minutes weekly be given to each of these subjects. It is often better to condense these studies into certain portions of the year, giving more time to them each week and using them as the basis, to a certain degree, of language work. I believe that, especially with young children, clearer concepts are produced by such connected study, pursued for fewer weeks, than by lessons seven days apart.

4. In my judgment manual training should not be limited to the seventh and eighth grades, but should begin in the kindergarten with the simple study of form from objects and the reproduction in paper of the objects presented, and should extend, in a series of carefully graded lessons, through all the grades, leaving, however, the heavier tools, such as the plane, for the seventh and eighth grades. By these means an interest is kept up in the various human industries, sympathy for all labor is created, and a certain degree of skill is developed; moreover the interest of the pupils in their school is greatly enhanced. Manual training has often proved the magnet by

which boys at the restless age have been kept in school instead of leaving for some gainful occupation.

5. I desire to suggest that geometry may be so taught as to be a better mathematical study than algebra to succeed or accompany arithmetic in the seventh and eighth grades. I do not refer particularly to inventional geometry, to which the Committee accords a slighting attention, but to constructive geometry and the simplest propositions in demonstrative geometry, thus involving the comprehension of the elementary geometric forms and their more obvious relations. This study may be made of especial interest in connection with manual training and drawing, while it presents fewer difficulties to the immature mind than the abstractions of algebra, since it connects more directly with the concrete, by which its presentation may often be aided.

15

6. While agreeing fully with the majority of the Committee that the full scientific method should not be applied to the study of elementary science by young children, yet I am compelled to favor more of experimentation and observation by the child, and less of telling by the teacher than the report would seem to favor.

7. I would go farther than the majority of the Committee, and insist that, except in rare cases, there should be no specialization of the teaching force below the High School, and that even in the first years of the High School, so far as possible, specialization should be subordinated to a general care of the child's welfare and oversight of his methods of study, which are impossible when a corps of teachers give instruction, each in one subject, and see the student only during the hour of recitation.

30

8. While in the main I agree with the bald statements under the head "Correlation by synthesis of studies," since reference is made to only a very artificial mode of synthesis not at all in vogue in this country, I must dissent emphatically from this portion of the report as by inference condemning a most important department of correlation, to which I have referred earlier. The doctrine of concentration is not necessarily arti-

35

ficial ; rather it refers to the higher unity, of which this Committee has spoken in glowing terms as belonging to the province of higher education. It also includes the division of the school curriculum into content and form, which this Committee
5 inferentially adopts in its treatment of language. I do not believe, any more than do the majority of the Committee, that the entire course of study can be literally and exactly centered about a single subject, nor do I believe in any artificial correlation ; but there is a natural relation of all knowl-
10 edges, which this Committee admits in various places, and which is the basis of a proper synthesis of studies, according to the psychological principal of apperception.

9. If by the term "oral," as applied to lessons in biography and in natural science, the Committee means, as the word would
15 imply, that the instruction is to be given in the form of lectures by the teacher, I cannot in full agree with the Committee's conclusions. As I have already stated, in natural science the work should be largely that of observation, and in history and biography, while in the very lowest grades the teachers
20 should tell the children stories, as soon as it is possible the desired information should be obtained by the student through reading. To this end the reading lesson in school should be properly correlated with his other studies, and he should be advised as to his home reading. The information thus
25 obtained should be the subject of conversation in the class, and should furnish the material for much of the written language work of the children.

10. I must dissent emphatically and entirely from that portion of the report which recommends that a text-book in
30 grammar be introduced into the fifth year of the child's school life. It is a question in my mind whether it would not be better if the text-book were not introduced into the grades below the High School at all. Certainly it should not appear before the seventh year. Such knowledge of grammar as will
35 familiarize the child with the structure of the sentence, the basis of all language, and as will enable him to use correctly forms of speech which the necessities of expression require,

should be given orally by the teacher in connection with the child's written work, when needed ; but against the introduction of a text-book upon grammar, the most abstruse of all the subjects of the school curriculum, when the pupil is not more than ten years old, I must protest. Instead of that the child 5 should devote much time, some every day, to writing upon proper themes in the best English he can command, furnishing occasion to the teacher to correct such errors as he may make, and acquiring by use acquaintance with the correct forms of grammar. If, as will doubtless be the case in most 10 cities, local conditions render the introduction of Latin into the eighth grade inadvisable, this study of grammar may be made in that grade somewhat more intensive.

11. If by a text-book in geography is meant that which is commonly understood by the term, and not simply geographi- 15 cal reading matter, in my judgment, it should not be introduced earlier than the fifth year.

These suggestions and expressions of dissent, if approved by the Committee, would necessitate some change in the programme submitted, the most important of which would be the 20 making room for the production of English in the grades. This could be provided in the first and second grades by taking some of the time devoted to penmanship and doing the work partly in connection with the reading classes. In the third and fourth grades it should take some of the time 25 devoted to penmanship and should be studied also in connection with geography and reading, and in the fifth and sixth grades it should take all of the time given to grammar.

I regret to be compelled to express dissent upon so many points, but as most of them appear to me vital and as the 30 differences appear to be not merely superficial but fundamental, affecting and affected by one's entire educational creed, I cannot do otherwise. To most of the report I most gladly give my assent and approval.

CHARLES B. GILBERT,
Superintendent of Schools, St. Paul, Minn.

I agree most heartily with the main features of the foregoing report of the sub-committee on correlation of studies. It is so admirable in its analysis of subjects and in its statement of comparative education values, and so suggestive in its
5 practical applications to teaching, that I regret to find myself appearing in any way to dissent from its conclusions. Indeed my principal objection is not against anything contained in the report (unless it be against a possible inference which might be drawn at one point), but it refers rather to what seems to
10 me to be an omission.

X In addition to all the forms of correlation recommended in the report, it seems to me possible to make a correlation of subjects in a programme in such way that the selection of subject-matter may be to some extent from all fields of knowledge.
15 These selections should be such as are related to one another so as to be mutually helpful in acquisition. They should be the main features of knowledge in the different departments.

These different departments from which the chosen subjects should be taken must be fundamental ones and must be
20 sufficiently numerous to represent universal culture. The report itself indicates conclusively what these are.

Reference is made in the report to various attempts that have been made to correlate subjects of study.

A very just criticism is made upon that attempt at correlation by the use of the story of Robinson Crusoe as a center of
25 correlation. It is distinctly pointed out in the report that the experiences of Robinson Crusoe are lacking in many of the elements of universal culture, and in many elements of education needed to adjust the individual properly to the civilization of our time and country. It is equally evident that the
30 attempt to make this story the center of correlation leads directly to trivial exercises in other subjects in order to make them "correlate" with Robinson Crusoe. It is also shown in the report that it naturally leads to fragmentary knowledge
35 of many subjects very much inferior to that clear, logically connected knowledge of a subject which may be had by pursuing it without reference to correlating it with all others.

It is at this point that in my judgment a wrong inference is permitted by the report.

It does not, as it seems to me, follow that, because correlation based on Robinson Crusoe is a failure, all correlations having the same general purpose will necessarily prove failures. For my own part I do not believe that correlation needs any "center," outside the child and its natural activities. If, however, it seems wiser to give special prominence to any given field of acquisition, it should, in my judgment, be accorded to language and its closely related subjects—reading, spelling, writing, composing, study of literature, etc., etc. Indeed language as a mode of expression is organically related to thinking, in all fields of knowledge, as form is related to content. A "system" or "programme" of correlation on this basis would seek for fundamental ideas in all the leading branches and make them themes of thought and occasions of language exercises. The selections would omit all trivialities in all subjects, and would not attempt to correlate for the mere sake of correlation; but would seek to correlate wherever by such correlation kindred themes may be made to illuminate one another. To illustrate, concrete problems in arithmetic would be sought that would clearly develop and illustrate mathematical ideas and their application; but in a secondary way these problems would be sought for in the various departments of concrete knowledge—geography, history, physics, chemistry, astronomy, meteorology, political, industrial, or domestic economy. But none of these themes would be so relied upon for problems as to compel one to choose unreasonable or trivial relations on which to base them. The problems themselves should represent true and important facts and relations of the other subjects as surely and rigidly as they should involve correct mathematical principles; and all such exercises should be rightly related to the child's education in language.

In like manner, when a child is engaged in nature study of any kind, some valuable problems in mathematics may be found rightly related both to the subject directly in hand and

the child's natural progress in arithmetic. Also many of the lessons in nature study are directly related to some of the finest literature ever produced, in which analogies of nature are made the means of expression for the finest and most delicate of the human experiences. When the child has mastered the physical facts on which the literary inspiration is based is the true time to give him the advantage of the study of such literature. These ideas are not only rightly related to one another, but to the mind itself. It is, so to speak, the nascent moment when the mind can easily and fully master what might else remain an impenetrable mystery; and all because subjects and occasion have come into happy conjunction.

This is not the place in which to attempt any elaboration of such a system of correlation. But I feel that its absence from the report may make many persons feel that the latter is so far incomplete.

L. H. JONES,
Superintendent of Schools, Cleveland, O.

With the main lines of thought in this report I find myself in agreement. With many of its details, however, I am not in accord. I regret to have to express my dissent from its conclusions in the following particulars:

1. The report makes too little of the uses of grammar as supplying canons of criticism which enable the pupil to correct his own English, and as furnishing a key (grammatical analysis) that gives him the power to see the meaning of obscure or involved sentences.

2. For the study of literature, complete works are to be preferred to the selections found in school readers.

3. That species of language exercise known as paraphrasing I regard as harmful.

4. The study of number should not be omitted from the first year in school. Practice in the primary operations of arithmetic should not be omitted from the seventh and eighth years. The quadratic equation should be reserved for the High School.

5. The foreign language introduced into the elementary school course should be a modern language—French or German. Latin should be reserved for those who have time and opportunity to master its literature.

6. In the general programme of studies, the school day is 5 cut up into too many short periods. The tendency of such a programme as that in the text would be to destroy repose of mind and render reflection almost an impossibility.

7. I desire to express my agreement with the opinions stated in Sections 2, 3, 6, and 9 of Mr. Gilbert's dissenting 10. opinion; and, in the main, with what Mr. Jones says on the correlation of studies.

WILLIAM H. MAXWELL,
Superintendent of Schools, Brooklyn, N. Y.

III

REPORT OF THE

SUB-COMMITTEE ON THE ORGANIZATION OF CITY SCHOOL SYSTEMS

It is understood that the Committee is to treat of city school systems which are so large that persons chosen by the people to manage them, and serving without pay, cannot be expected to transact all the business of the system in person, nor to have personal knowledge of all business transactions; and which are also so large that one person employed to supervise the instruction cannot be assumed to personally manage or direct all of the details thereof; but must, in each case, act under plans of organization and administration established by law, and through assistants or representatives.

The end for which a school system exists is the *instruction of the children*, the word instruction being used with the meaning it attains in the mind of a well-educated person, if not in the mind of an educational expert.

To secure this end, no plan of organization alone will suffice. Nothing can take the place of a sincere desire for good schools, of a fair knowledge of what good schools are and of what will make them, of a public spirit and a moral sense on the part of the people, which are spontaneous or which can be appealed to with confidence. Fortunately the interest which the people have in their own children is so large, and the anxiety of the community for public order and security is so great, that public sentiment may ordinarily be relied upon, or may be aroused to action, to choose proper representatives and take proper measures for the administration of the schools. If, in any case, this is not so, there is little hope of efficient schools. Wherever it *is* so, it alone will not suffice; but proper organization may become the instrument of public

sentiment and develop schools that will be equal to the needs of all and become the safeguards of citizenship.

Efficient schools can be secured only by providing suitable buildings and appliances and by keeping them in proper order, on the one hand, and, on the other hand, by employ- 5 ing, organizing, aiding, and directing teachers so that the instruction shall have life and power to accomplish the great end for which schools are maintained.

The circumstances of the case naturally and quickly separate the duties of administration into two great departments: one 10 which manages the business affairs, and the other which supervises the instruction. The business affairs of the school system may be transacted by any citizens of common honesty, correct purposes, and of good business experience and sagacity. The instruction will be ineffective and abnormally 15 expensive unless put upon a scientific educational basis and supervised by competent educational experts.

There will be a waste of money and effort, and a lack of results, unless the authorities of these two departments are sympathetic with each other; that is, unless, on the one hand, 20 the business management is sound, is appreciative of good teaching, looks upon it as a scientific and professional employment, and is alert to sustain it; and unless, on the other hand, the instructors are competent and self-respecting, know what good business management is, are glad to uphold it, and are 25 able to respect those who are charged with responsibility for it.

To secure efficiency in these departments, there must be adequate authority and quick public accountability. The problem is not merely to secure some good schoolhouses, but good schoolhouses wherever needed, and to avoid the use of 30 all houses which are not suitable; it is not to get some good teaching, but to prevent all bad teaching and to advance all the teaching to the highest possible point of special training, of professional spirit, and of life-giving power. All of the business matters must be intrusted to competent business 35 hands and managed upon sound business principles; and all of the instruction must be put upon a professional basis. To

insure this, there must be deliberation and wisdom in determining policy, and then the power to do what is determined upon must be present and capable of exercise, and the responsibility for the proper exercise of the power must, in each case, be individual and immediate.

It is imperative that we discriminate between the legislative and the executive action in organizing and administering the schools. The influences which enter into legislative action looking to the general organization and work of the schools must necessarily and fundamentally flow directly from the people and be widely spread. The greater the number of people, in proportion to the entire population, who can be led to take a positive interest and an active part in securing good schools the better will the schools be, provided the people can secure the complete execution of their purposes and plans.

But experience has clearly shown that many causes intervene to prevent the complete execution of such plans; that all the natural enemies of sound administration scent plenty of plunder and are especially active here; that good school administration requires much strength of character, much business experience, much technical knowledge, and can be measurably satisfactory only when the responsibility is adequate and the penalties for maladministration are severe. Decentralization in making the plan and determining what shall be done, and centralization in executing the plan and in doing what is to be done, are perhaps equally important.

It should be remembered that the character of the school work of a city is not merely a matter of local interest, and that the maintenance of the schools does not rest merely or mainly upon local authority. The people of the municipality, acting, and ordinarily glad to act, but in any event being required to act, under and pursuant to the law which has been ordained by the sovereign authority of the State, establish and maintain schools. They must have the taxing power which the State alone possesses in order to enable them to proceed at all.

They must regard the directions which the State sees fit to give as to the essential character of the schools, when it exer-

cises in their behalf, or when it delegates to them, the power of taxation.

The plan should be flexible for good while inflexible for evil. After meeting essential requirements, the people of the municipality may and should be empowered to proceed as much 5 farther as they will in elaborating a system of schools. The higher the plane of average intelligence, and the more generally and the more directly the people act in deciding what shall be done, and the greater the facility and completeness with which the intelligence of the city is able to secure the proper 10 execution of its plans by officers appointed for that purpose, the more elaborate and the more efficient will be the schools.

It is idle to suggest that centering executive functions is unwisely taking power away from the people. The people cannot execute plans themselves. The authority to do so must neces- 15 sarily be delegated. The question simply is: Shall it be given to a number of persons, and, if so, to how many? Or, to only one? This question is to be decided by experience, and it is of course true that experience has not been uniform. But it is doubtless true that the general experience of the communi- 20 ties of the country has shown that where purely executive functions are conferred upon a number of persons, jointly, they yield to antagonistic influences and shift the responsibility from one to another; and that centering the responsibility for the proper discharge of executive duties upon a single 25 person, who gets the credit of good work and must bear the disgrace or penalty of bad work, and who can quickly be held accountable for misdeeds and inefficiency, has secured the fullest execution of public plans and the largest results. To call this "centralization," with the meaning which commonly 30 attaches to the word, is inaccurate. Instead of removing the power from the people, it is keeping the power closer to the people and making it possible for the citizen, in his individual capacity, and for organized bodies of citizens, to secure the execution of plans according to the purpose and intent with 35 which those plans were made. Indeed it is safe to say that experience has shown that it is *the only way* in which to pre-

vent the frequent thwarting of the popular will and the defiance of individuals whose interests are ignored or whose rights are invaded.

So much, it seems to us, is strongly supported both by
5 reason and by experience, and is clearly manifest.

But all the people of a city whose population is numbered by hundreds of thousands or millions cannot meet in a legislative assemblage to formulate plans for school government, any more than they can all meet to make plans for municipal government.
10 They cannot even gather in mass meetings, and, if they could, mass meetings cannot deliberate. Even their legislative action must flow not from a primary but from a representative assembly.

What shall such a representative legislative body be called? How shall it be chosen? Of how many members shall it be
15 composed? And what shall be its powers? These and other similar questions are all-important and must be determined by the law-making power of the State. The sentiments of the city, as expressed through the local organizations and particularly through the newspapers, must of course have much
20 weight with the legislature if there is anything like unanimity or any very strong preponderance of opinion in the city; for the plan for which a community expresses a preference will surely be likely to operate most effectually in that community. But the local sentiment is not conclusive. When divided, it
25 is no guide at all. The legislature is to take all the circumstances into consideration, take the world's experience for its guide, and, acting under its responsibilities, it must exercise its high powers in ways that will build up a system of schools in the city likely to articulate with the State educational
30 system and become the effective instrument of developing the intelligence and training the character of the children of the city up to the ideals of the State.

The name of the legislative branch of the school government is not material, and the one to which the people are
35 accustomed may well continue to be employed. There is no name more appropriate than the "Board of Education."

The manner of selecting the members of this legislative

body may turn somewhat upon the circumstances of the city. We are strongly of the opinion that in view of the well-known difficulty about securing the attendance of the most interested and intelligent electors at school elections, as well as because of the apparent impossibility of freeing school elections from political or municipal issues, the better manner of selection is by appointment.

If the members of the board are appointed, the mayor of the city is likely to be the official to whom the power of appointment may most safely be intrusted. The mayor is not suggested because his office should sustain any relations to the school system, but in spite of the fact that it does not and should not. The school system should be absolutely emancipated from partisan politics and completely dissociated from municipal business. But we think the appointments should be made by some one person rather than by a board. The mayor is representative of the whole city and all its interests. While not chosen with any reference to the interests of the schools, he may be assumed to have information as to the fitness of citizens for particular responsibilities and to be desirous of promoting the educational interests of the people. If he is given the power of appointment, he should be particularly enjoined, by law, to consider only the fitness of individuals and to pay no regard to party affiliations, unless it be particularly to see to it that no one political party has an overwhelming preponderance in the board. The mayor very commonly feels constrained, under the pressure of party expediency, to make so many questionable appointments that he is only too glad, and particularly so when enjoined by the law, to make very acceptable appointments of members of school boards, in order that he may gratify the better sentiment of the city. We are confident that the problem of getting a representative board of education is not so difficult as many think, if the board is not permitted to make patronage of work and of salaried positions at the disposal of the public school system. Under such circumstances, and more and more so as we have approached such circumstances, appointment in the

way we suggest has produced the best school boards in the larger cities of the country.

Attempts to eliminate partisanship from school administration, by arraying an equal number of partisans against each other in school boards do not at least aim at an ideal. At times such boards have worked well and at others have led to mischievous consequences. The true course is to insist that all who have any share in the management of the schools shall divest themselves of partisanship, whether political or religious, in such management, and give themselves wholly to the high interests intrusted to them. If it be said that this cannot be realized, it may be answered, without admitting it, that even if that were so it would be no reason why the friends of the schools should not assert the sound principle and secure its enforcement as far as possible. We must certainly give no countenance to makeshifts which experience has shown to be misleading and expensive. The right must prevail in the end, and the earlier and more strongly it is contended for the sooner it will prevail.

The members of school boards should be representative of the whole population and of all their common educational interests, and should not be chosen to represent any ward or subdivision of the territory or any party or element in the political, religious, or social life thereof. Where this principle is not enforced, the members will feel bound to gain what advantage they can for the sub-district or special interests they represent; bitter contests will ensue, and the common interests will suffer.

The number of the members of a board of education should be small. In cities of less than 500,000 inhabitants it should not be more than nine, and preferably not more than five. In the very largest cities it may well be extended to fifteen.

The term for which members are appointed should be a long one, say five years.

We think it an excellent plan to provide for two branches and sets of powers in the board of education; the one to have the veto power, or at least to act as a check upon the acts of

the other. This may be accomplished by creating the office of School Director and charging the incumbent with executive duties on the business side of the administration, and by giving him the veto over the acts of the other branch of the board, which may be called the School Council. Beyond 5 the care and conservatism which are insured by two sets of powers acting against each other, this plan has the advantage of giving the chief executive officer of the system just as high and good a title as that of members of the board; it is likely to secure a more representative man, and gives him larger pre-10 rogatives in the discharge of his executive duties and better standing among the people, particularly among the employees and teachers associated with the public school system.

If this plan is adopted, the school director should be required to give his entire time to the duties of his position 15 and be properly compensated therefor. He should be the custodian of all property and should appoint all assistants, janitors, and workmen authorized by the board for the care of this property. He should give bond with sufficient sureties and penalties for the faithful and proper discharge of all his 20 duties. He should be authorized by law to expend funds, within a fixed limit, for repairs, appliances, and help, without the action of the board. All contracts should be made by him and should run in his name, and he should be charged with the responsibility of seeing that they are faithfully and 25 completely executed. All contracts involving more than a limited and fixed sum of money should be let upon bids to be advertised for and opened in public. He should have a seat in the board of education, should not vote but should have the power to veto, either absolutely or conditionally, any of 30 the acts of the board through a written communication. This officer and the school council should together constitute the board of education.

The board of education should be vested only with legislative functions and should be required to act wholly through 35 formal and recorded resolutions. It should determine and direct the general policy of the school system. Within reason-

able limits, as to amount, it should be given power, in its discretion, to levy whatever moneys may be needed for school purposes. It should control the expenditure of all moneys beyond a fixed and limited amount, which may safely and 5 advantageously be left to the discretion of the chief executive business officer. It should authorize, by general resolutions, the appointment of necessary officers and employees in the business department, and of the superintendent, assistants, and teachers in the department of instruction, but it should be 10 allowed to make no appointments other than its own clerk. With this necessary exception, single officers should be charged with responsibility for all appointments.

This plan, not in all particulars, but in the essential ones, has been on trial in the city of Cleveland, O., for nearly three years, 15 and has worked with very general acceptability. If this plan is adopted, the chief executive officer of the system is already provided for and his duties have already been indicated. Otherwise it will be necessary for the board to appoint such an officer. In that event the law should declare him independ- 20 ent, confer upon him adequate authority for the performance of executive duties, and charge him with responsibility. But we know of no statutory language capable of making an officer appointed by a board, and dependent upon the same board for supplies, independent in fact of the personal wishes of the 25 members of that board. And right here is where the troubles rush in to discredit and damage the school system.

We now come to the subject of paramount importance in making a plan for the school government in a great city, namely, the character of the teaching force and the quality of 30 the instruction. A city school system may be able to withstand some abuses on the business side of its administration and continue to perform its function with measurable success, but wrongs against the instruction must, in a little time, prove fatal. The strongest language is none too strong here. The 35 safety of the Republic, the security of American citizenship, are at stake. Government by the people has no more dangerous pitfall in its road than this, that in the mighty cities of

the land the comfortable and intelligent masses, who are discriminating more and more closely about the education of their children, shall become dissatisfied with the social status of the teachers and the quality of the teaching in the common schools. In that event, they will educate their children at 5 their own expense, and the public schools will become only good enough for those who can afford no better. The only way to avert this is by maintaining the instruction upon a purely scientific and professional footing. This is entirely practicable, but it involves much care and expense in training 10 teachers, the absolute elimination of favoritism from appointments, the security of the right to advancement, after appointment, on the basis of merit, and a general leadership which is kindly, helpful, and stimulating to individuals, which can secure harmonious co-operation from all the members, and 15 which lends energy and inspiration to the whole body.

This cannot be secured if there is any lack of authority, and experience amply proves that it will not be secured if there is any division of responsibility. The whole matter of instruction must be placed in the hands of a superintendent of instruction, 20 with independent powers and adequate authority, who is charged with full responsibility.

The danger of inconsiderate or improper action by one vested with such powers is of course possible, but it is remote. Regardless of the legal powers with which he may be indi- 25 vidually vested, he is in fact and in law a part of a large system. He must act through others and in the presence of multitudes. There is great publicity about all he does. When a single officer carries such responsibility he is at the focus of all eyes. There are the strongest incentives to right 30 action. Without discovery, at least by many persons, he cannot act wrongfully. If he is required to act under and pursuant to a plan, the details of which have been announced, and of which we shall speak in a moment, a wrongful act will be known to the world and he must bear the responsibility of 35 it, and the danger of maladministration is almost eliminated.

Moreover, we must consider the alternative. It is not in

doubt. All who have had any contact with the subject are familiar with it. It is administration by boards or committees, the members of which are not competent to manage professional matters and develop an expert teaching-force. Yet they assume, and in most cases honestly, the knowledge of the most experienced. They override and degrade a superintendent, when they have the power to do so, until he becomes their mere factotum. For the sake of harmony and the continuance of his position he concedes, surrenders, and acquiesces in their acts, while the continually increasing teaching-force becomes weaker and weaker and the work poorer and poorer. If he refuses to do this, they precipitate an open rupture and turn him out of his position. Then they cloud the issues and shift the responsibility from one to another. There are exceptions, of course, but they do not change the rule.

It will be unprofitable to mince words about this all-important matter. If the course of study for the public schools of a great city is to be determined by laymen, it will not be suited to the needs of a community. If teachers are to be appointed by boards or committees, the members of which are particularly sensitive to the desires of people who have votes or influence, looseness of action is inevitable and unworthy considerations will frequently prevail. If the action of a board or committee be conditioned upon the recommendation of a superintendent, the plan will not suffice. No one person is stronger than the system of which he is a part. Such a plan results in contests, between the board and the superintendent, and such a contest is obviously an unequal one. There is little doubt of the outcome. In recommending for the appointment of teachers, the personal wishes of members of the board, in particular cases, will have to be acquiesced in. If a teacher, no matter how unfit, cannot be dropped from the list without the approval of a board or committee after they have heard from her friends and sympathizers, she will remain indefinitely in the service. This means a low tone in the teaching force and desolation in the work of the schools. If the superintendent accepts the situation, he becomes less and

less capable of developing a professional teaching service. If he refuses to accept it, he is very likely to meet humiliation: dismissal is inevitable unless he is strong enough to make himself secure by doing the right thing and going directly to the people and winning their approval.

5

The superintendent of instruction should be charged with no duty save the supervision of the instruction, but should be charged with the responsibility of making that professional and scientific, and should be given the position and authority to accomplish that end.

10

If the board of education is constituted upon the old plan, he must be chosen by the board. If it is constituted upon the Cleveland plan, he may be appointed by the school director with the approval of two-thirds or three-fourths of the council. The latter plan seems preferable, for it centralizes the main responsibility of this important appointment in a single individual. In either case, the law and the sentiment of the city should direct that the appointee shall be a person liberally educated, professionally trained, one who knows what good teaching is, but is also experienced in administration, in touch with public affairs and in sympathy with popular feeling.

The term of the superintendent of instruction should be from five to ten years, and until a successor is appointed. In our judgment it should be determinate so that there may be a time of public examination, but it should be sufficiently long to enable one to lay foundations and show results without being carried under by the prejudices which always follow the first operation of efficient or drastic plans. The salary should be fixed by law and not subject to change in the middle of a term or except by law.

30

For reasons already suggested, the superintendent, once appointed, should have power to appoint from an eligible list all assistants and teachers authorized by the board, and unlimited authority to assign them to their respective positions and reassign them or remove them from the force at his discretion.

To secure a position upon the eligible list from which

appointments may be made, a candidate, if without experience, should be required to complete the full four years' course of the city high schools, or its equivalent, and in addition thereto pass the examination of the board of examiners, and complete at least a year's course of professional training in a city normal training school under the direction of the superintendent. If the candidate has had say three years of successful experience as a teacher, he should be eligible to appointment by passing an examination held by a general examining board. This board may be appointed by the board of education, but should examine none but graduates of the high school and training school unless specially requested so to do by the superintendent of instruction. The number admitted to the training schools should be limited, and the examinations should be gauged to the prospective needs of the elementary schools, for new teachers. The supply of new teachers may well be largely, but should not be wholly, drawn from this local source. The force will gain fresh vitality by some appointments of good and experienced teachers from outside.

The work of putting a large teaching force upon a professional basis, of making the teaching scientific and capable of arousing minds to action, is so difficult that a layman can scarcely appreciate it. It has hardly been commenced, it has been made possible only when the avenues of approach to the service have been closed against the unqualified and unworthy. After that, the supervision must be close and general as well as sympathetic and decisive. The superintendent must have expert assistants enough to learn the characteristics and measure the work of every member of the force. They must help and encourage, advise and direct, according to the circumstances of each case. The work must be reduced to a system and the workers brought into harmonious relations. Each room must show neatness and life, and the whole force must show ardor and enthusiasm. By directing the reading, by encouraging an interchange of visits, by organizing clubs for self-improvement, by frequent class, grade, and general meetings, the professional spirit must be aroused and the work

energized. Those who show teaching power, versatility, amiability, reliability, steadiness, and growth, must be rewarded with the highest positions; those who lack fiber, who have no energy, who are incapable of enthusiasm, who will not work agreeably with their associates, must go upon the retired 5 list. Directness and openness must be encouraged. Attempts to invoke social, political, religious, or other outside influences to secure preferment must operate to close the door to advancement. In general and in particular, bad teaching must be prevented. In every room, a firm and kindly management 10 must prevail and good teaching must be apparent. All must work along common lines which will insure general and essential ends. Until a teacher can do this and can be relied upon to do it, she must be helped and directed; when it is manifest she cannot or will not do it, she must be dismissed: when she 15 shows she can do it and wants to do it, she must be left to exercise her own judgment and originality and do it in her own way. In the schoolroom, the teacher must be secure against interference. In all the affairs of the school, her judgment must be trusted to the utmost limit of safety. Then 20 judgment will strengthen and self-respect and public respect will grow. The qualities which develop in the teacher will develop in the school. To develop these qualities with any degree of uniformity, in a large teaching force, requires steady and uniform treatment through a long course of years under 25 superintendence which is professional, strong, just, and courageous; which has ample assistance and authority; which is worthy of public confidence and knows how to marshal facts, present arguments, and appeal to the intelligence and integrity of the community with success. 30

It is the business of the plan of organization to secure such superintendence. It cannot be secured through an ordinary board of education operating on the old plan. It is well known what the influences are that are everywhere prevalent and must inevitably prevent it. It may be secured in the 35 law, and it must be secured there or it will not be secured at all.

In concluding this portion of the report, the Committee indicates briefly the principles which must necessarily be observed in framing a plan of organization and government in a large city school system.

5 *First.* The affairs of the school should not be mixed up with partisan contests or municipal business.

Second. There should be a sharp distinction between legislative functions and executive duties.

Third. Legislative functions should be clearly fixed by
10 statute and be exercised by a comparatively small board, each member of which is representative of the whole city. This board, within statutory limitations, should determine the policy of the system, levy taxes, and control the expenditures. It should make no appointments. Every act should be by a
15 recorded resolution. It seems preferable that this board be created by appointment rather than election, and that it be constituted of two branches acting against each other.

Fourth. Administration should be separated into two great independent departments, one of which manages the business
20 interests and the other of which supervises the instruction. Each of these should be wholly directed by a single official who is vested with ample authority and charged with full responsibility for sound administration.

Fifth. The chief executive officer on the business side
25 should be charged with the care of all property and with the duty of keeping it in suitable condition: he should provide all necessary furnishings and appliances: he should make all agreements and see that they are properly performed: he should appoint all assistants, janitors, and workmen. In a word, he
30 should do all that the law contemplates and all that the board authorizes, concerning the business affairs of the school system, and when anything goes wrong he should answer for it. He may be appointed by the board, but we think it preferable that he be chosen in the same way the members of the board
35 are chosen, and be given a veto upon the acts of the board.

Sixth. The chief executive officer of the department of instruction should be given a long term and may be appointed

by the board. If the board is constituted of two branches, he should be nominated by the business executive and confirmed by the legislative branch. Once appointed, he should be independent. He should appoint all authorized assistants and teachers from an eligible list to be constituted as provided by 5 law. He should assign to duties and discontinue services for cause, at his discretion. He should determine all matters relating to instruction. He should be charged with the responsibility of developing a professional and enthusiastic teaching force and of making all the teaching scientific and 10 forceful. He must perfect the organization of his department and make and carry out plans to accomplish this. If he cannot do this in a reasonable time he should be superseded by one who can.

The government of a vast city school system comes to have 15 an autonomy which is largely its own and almost independent of direction or restraint. The volume of business which this government transacts is represented only by millions of dollars: it calls not only for the highest sagacity and the ripest experience, but also for much special information relating to 20 school property and school affairs. Even more important than this is the fact that this government controls and determines the educational policy of the city and carries on the instruction of tens or hundreds of thousands of children. This instruction is of little value, and perhaps vicious, unless it is 25 professional and scientific. This government is representative. All citizens are compelled to support it, and all have large interests which it is bound to promote. Every parent has rights which it is the duty of this school government to protect and enforce. When government exacts our support of 30 public education, when it comes into our homes and takes our children into its custody and instructs them according to its will, we acquire a right which is as exalted as any right of property, or of person, or of conscience, can be; and that is the right to know that the environment is healthful, that the man-35 agement is kindly and ennobling, and that the instruction is rational and scientific. It is needless to say to what extent

these interests are impeded or blocked, or how commonly these rights of citizenship and of parentage are denied or defied, or how helpless the individual is who seeks their enforcement under the system of school government which has heretofore obtained in some of the great cities of the country. This is not surprising. It is only the logical result of the rapid growth of cities, of a marvelous advance in knowledge of what is needed in the schools, of the antagonism of selfish interests by which all public administration and particularly school administration is encompassed, and of the lack of plan and system, the confusion of powers, the absence of individual responsibility, in the government of a system of schools. By the census of 1890 there are seven cities in the United States, each with a population greater than any one of sixteen States. The aggregate population of twelve cities exceeds the aggregate population of twenty States. Government for education certainly requires as strong and responsible an organization as government for any other purpose. These great centers of population, with their vast and complex educational problems, have passed the stage when government by the time-honored commission will suffice. No popular government ever determined the policy and administered the affairs of such large bodies of people successfully, ever transacted such a vast volume of business satisfactorily, ever promoted high and beneficent ends, ever afforded protection to the rights of each individual of the great multitude, unless in its plan of organization there was an organic separation of executive, legislative, and judicial functions and powers. All the circumstances of the case, and the uniform experience of the world, forbid our expecting any substantial solution of the problem we are considering until it is well settled in the sentiments of the people that the school systems of the greatest cities are only a part of the school systems of the States of which these cities form a part, and are subject to the legislative authority thereof: until there is a plan of school government in each city which differentiates executive acts from legislative functions; which emancipates the legislative branch of that government from the influence of

self-seekers; which fixes upon individuals the responsibility for executive acts, either performed or omitted; which gives to the intelligence of the community the power to influence legislation and exact perfect and complete execution; which affords to every citizen whose interests are ignored, or whose rights are invaded, a place for complaint and redress; and which puts the business interests upon a business footing, the teaching upon an expert basis, and gives to the instruction that protection and encouragement which is vital to the development of all professional and scientific work. 5 10

We have undertaken to indicate the general principles which we think should be observed in setting up the framework of government of a large city school system. While we have no thought that any precise form of organization which could be suggested, would, in all details, be imperative, we are 15 confident that the form or plan of organization is of supreme consequence, and that any which disregards the principles we have pointed out will work to disadvantage or lead to disaster.

ANDREW S. DRAPER,

President of the Illinois State University, Champaign, Ill.

W. B. POWELL,

Superintendent of Schools, Washington, D. C.

A. B. POLAND,

State Superintendent of Public Instruction, Trenton, N. J.

I find myself in general accord with the doctrines of the report. There is only one feature of it from which I feel 20 obliged to dissent, and that is an important though not necessarily a vital one. I refer to the office of school director. I see no need of such an officer elected by the people, and I do see the danger of his becoming a part of the political organization for the dispensation of patronage. 25

All power and authority in school affairs should reside ultimately in the board of education, consisting of not more than eight persons appointed by the mayor of the city, to hold office four years, two members retiring annually and eligible for reappointment once and no more. This board should 30

appoint as its chief officer a superintendent of instruction, whose tenure should be during good behavior and efficiency, and whose powers and duties should be to a large extent defined by statute law, and not wholly or chiefly by the regulations of the board of education. The superintendent of instruction should have a seat and voice but not a vote in the board of education. The board of education should also appoint a business agent, and define his powers and duties in relation to all matters of buildings, repairs, and supplies, substantially as set forth in the report in relation to the school director.

All teachers should be appointed and annually reappointed or recommended by the superintendent of instruction, until after a sufficient probation they are appointed on a tenure during good behavior and efficiency.

All matters relating to courses of study, text-books, and examinations should be left to the superintendent and his assistants, constituting a body of professional experts who should be regarded as alone competent to deal with such matters, and should be held accountable therefor to the board of education only in a general way, and not in particular details.

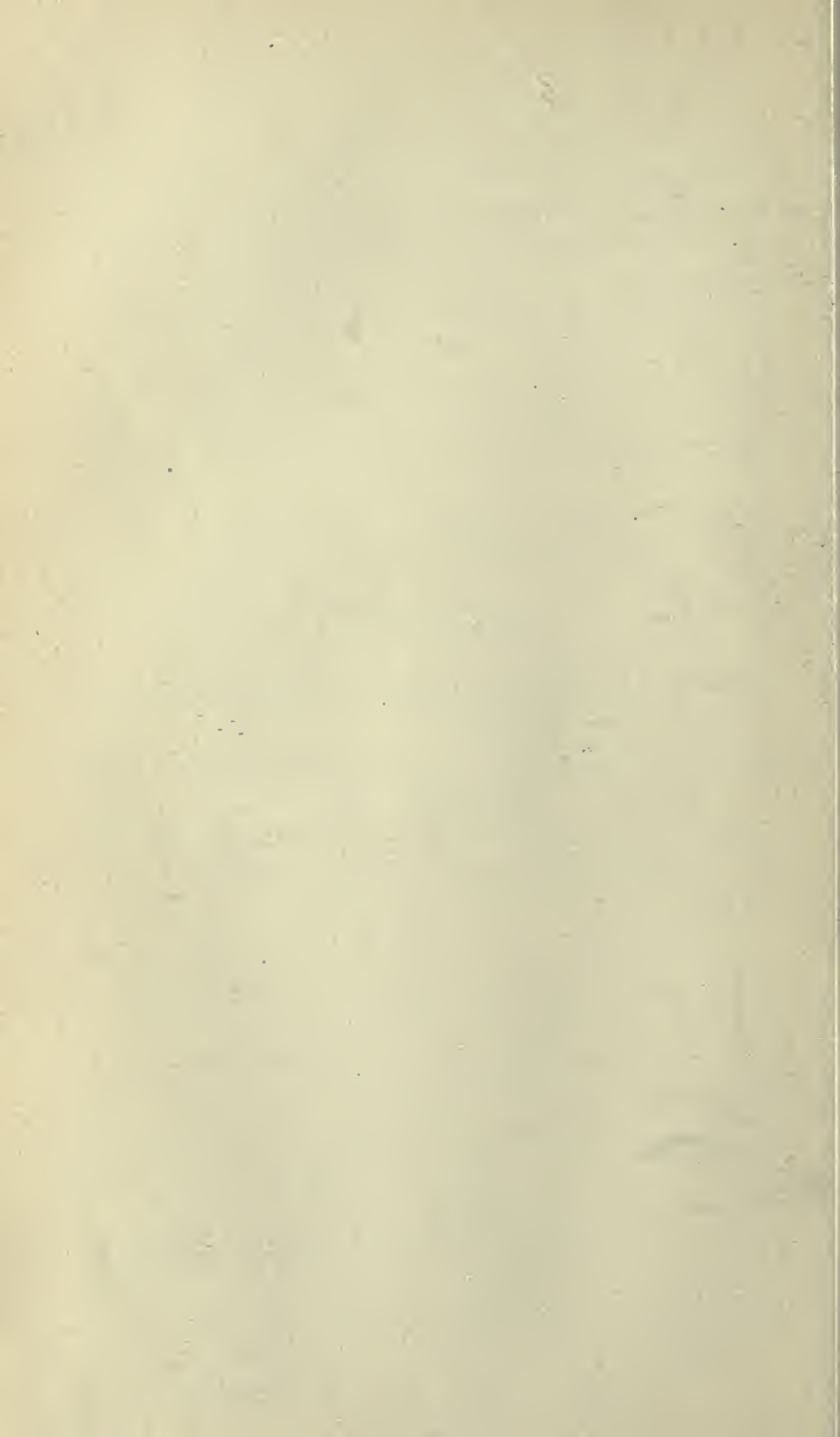
EDWIN P. SEAVER,
Superintendent of Schools, Boston, Mass.

I concur in the recommendations of the Sub-committee on the Organization of City School Systems as summarized in the concluding portion of the report, omitting in item *Third*, the words "And that it be constituted of two branches acting against each other." Omit *Fifth*, "But we think it preferable that he be chosen in the same way that members of the board are chosen and be given veto power upon the acts of the board." I recommend that the veto power be given to the president of the Board.

ALBERT G. LANE,
Superintendent of Schools, Chicago, Ill.

APPENDICES

- I. OPINIONS SUBMITTED TO THE SUB-COMMITTEE ON THE
TRAINING OF TEACHERS
- II. OPINIONS SUBMITTED TO THE SUB-COMMITTEE ON THE
CORRELATION OF STUDIES
- III. OPINIONS SUBMITTED TO THE SUB-COMMITTEE ON THE
ORGANIZATION OF CITY SCHOOL SYSTEMS



APPENDIX I

OPINIONS SUBMITTED TO THE SUB-COMMITTEE ON THE TRAINING OF TEACHERS

Following are the questions in answer to which the opinions were written :

1. What should be the lowest age at which a person should be permitted to undertake a course of professional work?

2. What should be the requirements for scholarship to enter on such a course?

(a) English—Grammar, Historical Grammar, Rhetoric, Literature.

(b) Mathematics—Arithmetic, Algebra, Geometry.

(c) Botany and Zoölogy.

(d) Drawing.

(e) Music.

(f) History.

(g) Geography.

(h) Physics.

(i) Chemistry.

(j) Foreign languages—French, German, Latin, Greek.

(k) Physiology and Hygiene.

(l) Mineralogy.

3. Should scholarship be determined by an examination, or should a high-school diploma be accepted as evidence? If the latter, should a four-years' course be required?

4. What should be the duration of the training-school course?

5. What proportion of this time should be devoted to studying principles and methods of education? What proportion, to the practice of teaching?

6. To what extent should psychology be studied, and in what way?

7. Along what lines should the observation of children be pursued?

8. What measurements of children should be made, and what apparatus should be required for the purpose?

9. In what way should principles of education be derived from psychology and allied sciences?

10. How far and in what way should the history of education be studied? In what way may the history of education be made of practical use to teachers?

11. In what way should the training in teaching the various subjects of the common-school curriculum be pursued?

(a) By writing outlines of lessons?

(b) By giving lessons to fellow pupil-teachers?

(c) By the study of books or periodicals devoted to methods of teaching?

(d) By lectures?

12. In a model school, should there be a model-teacher placed over each class? Or, should there be a model-teacher placed over every two classes? Or, should the pupil-teachers be held responsible for the teaching of all classes, under the direction of a critic-teacher?

13. What is the most fruitful plan of observing the work of model-teachers?

14. What is the most fruitful plan of criticising the practice work of pupil-teachers?

15. Should the criticism be made by the teachers of methodology, or by critic-teachers appointed specially for the purpose, or by the model-teachers?

16. Should the imparting of knowledge, other than psychology, principles, methods, and history of education, form any part of the work of a normal or training school?

17. How should a pupil-teacher's efficiency be tested in a training school?

18. On what grounds should the diploma of a training school be issued?

EARL BARNES, *Professor of Education*,
Stanford University, Palo Alto, Cal.

The training of teachers seems to me the most important and the most difficult question connected with our work in America to-day, and I am glad a systematic effort is being made to gather information bearing on it. The conditions vary so widely in our country that no one statement will hold for the whole country. With a wage in country schools often as low as twelve dollars a month, we cannot demand age nor preparation; while in California, with the wage almost never falling below fifty dollars a month, we can demand much more. In answering the questions I shall therefore have in mind the country and village teachers in a part of our country which pays from thirty dollars to sixty dollars a month for such work.

7. Studies on children should include observation of physical development, simple measurements, sense tests, recognition of common pathological conditions; studies in mental averages, peculiarities in mental operations, and tests for correction; æsthetic averages and peculiarities; and moral activities, with observational studies on the action of the mind of a child in dealing with each of the common subjects of study in elementary schools.

8. The measurements of children should be made along lines already worked over, say along the lines proposed by Dr. Boas in gathering data for Chicago. An inferior line of measurements had better be followed if it alone gives materials for comparison. Scales, measuring rods, and a pair of calipers will be sufficient.

10. The history of education is very badly taught at present. It should be something more than a series of biographies, or else nothing. I believe the history of education can be made a very valuable study, and that, if well taught, it would take place next to psychology in the course. Psychology should ask, What is the mind we are training? History of education should ask, How has the mind become what it is? It should be studied from original records, as in literature or science, and it should ask in successive periods of human development: 1. What kind of men and women were in demand at this time? What were the ideals? 2. What influences, conscious or unconscious, were brought to bear upon the young through religion, arts, literature, schools, and homes, to make more of the men and women desired? 3. How far did the effort to perpetuate or to realize their ideal succeed? 4. If it failed, why? Coming to our own time we could ask, What kinds of men and women are in demand? Judging from the experience of the past, how can we go to work to make more such men and women as we want? The manuals of school theory and personal biography can well be crowded into a brief informational course.

11. Children should be observed and studied while trying to learn the common subjects. Then by class discussion general

principles should be drawn out. The students should draught sample lessons—these should be discussed and corrected. Then the students should read and hear lectures, then form more lessons and teach them.

12. Not too many model-teachers—they are dangerous.

13. They should not be observed as models before trying to teach.

MRS. SARA F. BLISS, *Normal Training School*,

Providence, R. I.

2. A good high-school education, including a large part of the outline laid down on the question paper. The knowledge obtained is not necessarily called into requisition in any or every department of teaching, but the discipline derived from a thorough and careful study of the different subjects gives a wide general scope and provides power. "Knowledge" (all things being equal) "is power." The foreign languages, while they are a means of excellent discipline and culture, are not essential in preparation for primary or grammar school work.

6. Psychology should be studied as a science, and at the same time by the study of individuals. To be able to formulate and detect various conditions of mental power and action, requires enlightenment and wise direction, also capable supervision in the application of the science. The teacher needs to study children or a child at work, at play, in his relation to others, his playmates, his elders, in his unconscious moments, when left to himself, when he is interested in his own devices, when indolent and inactive, when he is being instructed, etc. Is it possible each day for the teacher to arouse the activities of interest, growth, and thought? Such is the real study of psychology.

10. The history of education should be studied not simply to become acquainted with the facts that there have been such enlightened educators, at certain periods, and what they thought, but their theories, principles, the *actual schools* of such individuals, their influence upon the masses or upon a select few. The most useful feature, however, is the influence upon the world; how far reaching, to what extent, we are affected by them. Bacon's theories mark a period in the evolution of education in England.

11. The four processes mentioned on the question proper are useful in their respective places. The actual observation and practice with classes of children to whom the subjects are suited, give far more enlightenment. In the theory class, one well-developed lesson putting into practice the previous study is of greater value than the other four. The theory is by no means sufficient: unless the teacher in practice has a personality, a power to arouse, stimulate to action, all the study and preparation in the world will prove a failure.

12. It is not necessary to have a model-teacher for each class. One model-teacher may also be a critic-teacher. A critic should be able to give good model lessons. One critic, who is at the

same time a model-teacher, may direct two rooms. It is not possible, however, to secure in every direction as good results as one teacher well trained may get by consecutive lessons from day to day. The only way to train a teacher is to give her sufficient responsibility and practice and discipline to become mistress of the situation. She should be held responsible to a certain extent, though allowance should be made for inexperience. The critic should see to it that the children under the charge of the pupil-teacher do not eventually suffer. She should herself be able to make provisions for defects to some extent.

A. C. BOYDEN, Bridgewater, Mass.

11. Outlines of lessons by pupil-teachers lead to formalism, to a transfer of thought from the individual child to the subject-matter in its mere logical relations.

Giving lessons to fellow pupil-teachers is valuable as a training in self-confidence, in directing thought, in meeting and answering questions, in acquiring skill, in putting questions, handling apparatus, etc.

12. Investigation and discussion of the subject from the teacher's standpoint with a live teacher is the best preparation. It furnishes inspiration, broader views, methods of arrangement and presentation, and suggestions of device, which books and lectures fail to give.

RICHARD G. BOONE, *Principal of the State Normal School*,
Ypsilanti, Mich.

The teachers of secondary schools differ, obviously, from those doing elementary work, in that the scholastic requirements of the former are both absolutely and relatively greater. Absolutely greater, as the work done, the same in subject-matter,—science, the humanities, languages, and mathematics,—is more comprehensive, and the corresponding processes comparative and critical rather than individual and descriptive. All of which implies in the teacher abundant insights and habits of discrimination, re-enforced by disciplined powers and large scholarship.

But if, *e. g.*, elementary teaching is intelligent only with a good elementary training plus a secondary education, instruction in the secondary school equally requires of the teacher, added to its own richest scholarship, the spirit and learning of the university and the habits and temper of the original investigator.

There is needed also a training in some school upon true university foundations, in which the secondary teacher shall have proved his claims to independent research and his resourcefulness in handling the raw materials of his course. This does not mean that the individual teaching and investigative devices of the university are to be of necessity introduced into the secondary school; or that the time here shall be given over to original inquiry and laboratory research. The high school is essentially a teaching body. The relative immaturity of the students, the accompanying neces-

sity of dealing with generalizations and rules and verifications, and the fact that the choice of a life-work, at least among learned occupations, is yet some years away, make instruction, not training or individual research, to be the chief function of the secondary school.

As the student grows older and more self-helpful and capable of directing his own studies within wide limits, as in the later college and university years, one may allow for less of professional insight and skill, and more for scholarship.

The university training, or a course grounded upon a liberal culture and after the individual methods of the laboratory and the seminary, may be made to contribute more than any inferior school to the resourcefulness of teaching and to an independence of mere recipes and formulæ. This elevation of the plane of criticism and guidance through the possession of generous standards and right habits of thinking are increasingly needed as the child grows older, until he reaches years of something like self-helpfulness.

It is most needed by the secondary teacher, inasmuch as the course pursued in secondary schools covers the most critical because transition period in the individual's life. These years are the most important in an educational way, not because the most fruitful, for the first six or eight years of a child's life would certainly take precedence; not because of the introduction of any new means, or any new standards of life; but rather because of the confusion and complexity of the life in these years, and yet more because they are so little understood. New interests are springing up; new motives prevail; new dangers are imminent; new and greater prospects stretch out and multiply. To direct the energies into and through this adolescent period demands the largest heart not less than a well-filled head; an understanding of the conditioning factors in this new life, and how to use them; a trained sympathy with its wants and waywardness. To say that these may not be given to one is to repeat the objection used against normal schools so indiscriminately fifty and forty years ago.

To concede that the real purpose of the secondary school is *education* and not *training* or *cram*, is to concede at once that the teachers of secondary schools have need of a complete and suitable preparation, just as do lower class teachers. That they need it more than do many other teachers, follows from the complexity and stubbornness of the conditions.

The high school, though of the highest secondary rank, belongs in its interests and methods to the common-school system, and fits its own teaching to the accomplished results of the elementary school. To do the work of the one well, requires a knowledge of the other. Looked at from this side, the preparation of the secondary teacher should include professional and practical acquaintance with the curriculum, and children, and the institutional and social conditions, and inner working of elementary schools.

This point needs emphasis because the preparation of teachers for secondary education, when it has been undertaken at all, has usually been from the point of view of the college and of scholar-

ship as satisfying every requirement. High-school teachers should have had at least a cadet training for a minimum time in elementary schools, if indeed they do not take their promotion to the higher classes from the lower.

Summarizing briefly the points enumerated, they are as follows :

1. The scholarship of secondary teachers should be relatively more abundant than that for elementary teachers, and is equally urgent.

2. The fact that the secondary school is a teaching body, and not an organization for research, emphasizes the need of professional training in its teachers.

3. The preparation of such teachers should include, also, an intimate and patient study of the adolescent, as the most significant fact in the secondary period.

4. Because the secondary school is often wholly, and always more or less, a finishing school, the training of its teachers should include both a theoretical and practical acquaintance with the organization and work of the under classes.

5. Inasmuch as it is sometimes a fitting school, and is growing in this service, the training of its teachers should include an equally efficient acquaintance with the constitution and culture of the superior schools depending upon it.

This implies :

(1) The scholarship and training that come to one from its classrooms and laboratories ; and

(2) A well-directed professional study of the leading educational and administrative problems that are common to the two schools, and those especially that are incident to the period of youth.

F. B. GAULT, *President of the University of Idaho,*

Moscow, Idaho.

I find a marked weakness in the professional training of teachers. I would rather place a young girl, granted she has requisite culture and an ambition to succeed, in a school with an able teacher, and let her assist in the drudgery, acting as a cadet or helper, than to run the risk of having her pass through a training school with critic-teacher attachments.

5. If the course is one year, devote all the time to study of principles and methods. True professional preparation consists of training *under* teaching, not *by* teaching. My best teachers have always come from the best schools. I think that practice-teaching in the model or training school is of little benefit to any one. If the school does good teaching, if it arouses the teaching ideal and teaching spirit, if it exemplifies the best in both form and spirit of teaching, the student will come out a teacher, even though there is not a day of practice work. Critic-teachers, expert trainers, *et al.*, maim and pervert as many teachers as they aid. The spirit of the training or professional school is worth more than training in conventional forms.

9. I have little faith in professional training that does not apply

the psychology upon the scholastic branches. The best psychology must accompany the best daily scholastic work. It must not be a top-dressing, but an outgrowth of the daily experience of the teacher while under training. Psychology is not a separate and detached study. It is under, above, and about every branch.

11. I think the best professional training will come only with scholastic training as the basis, under masterful teachers, who inspire students with a desire to teach and to teach well, and who are able to reveal the bearings of things. With some well-fixed scientific principles, with professional enthusiasm, with something of an inventive spirit aroused, the young teacher may safely go out to conduct a model school for himself, with his own ideals as critic-teacher, and succeed. The tendency of normal training is to bring the teacher to a full stop intellectually and professionally.

J. M. GREENWOOD, *Superintendent of Schools,*

Kansas City, Mo.

5. About two-thirds of the time should be devoted to the discussion of principles and methods of teaching, and not more than one-third to practice-teaching. Practice-teaching, "in leading-strings," has little independent educational value.

6. Probably the best way for a beginner to take up psychology is to require him or her to analyze a mental process, such as reciting a lesson, or solving a problem, or writing a letter, and to place each act of the mind during the process where it belongs. In this way the learner gets the technique of psychology; but the real study must proceed from the standpoint of the "*will* and *motives*." All scientific teaching depends upon psychology; it is the *psychology* which fits into every-day work. Much of it, as some get hold of it, is of such an intangible nature that it has no bearing on ordinary affairs. A good working *psychology*, derived from introspection and observation, is what the average teacher needs.

7. As a general thing, I would not advise teachers to make a critical physical examination of children. To find out whether they hear well and have good eyes, will be sufficient in most cases. Mental and moral traits should be carefully noted according to a scheme prepared by the superintendent. A blank, not too elaborate, will cover all necessary traits—bodily, mental, and moral.

11. (1) By analyzing each lesson; (2) by selecting the salient points for the recitation; (3) by presenting them in an orderly manner, provided the learners' minds have been properly prepared; (4) by connecting the lesson with all that had preceded it; (5) by having it reproduced and then clinched; (6) by having it practically applied; (7) by special and general discussion. The teacher needs to be trained so as to discriminate sharply between the essentials and the non-essentials in every recitation.

14. Too much criticism hampers. The first thing to show the beginner is what I call "schoolroom tactics," which includes all class movements regulated by signals, promptly and cheerfully obeyed. The critic-teacher should go through these movements

first and in the presence of the beginner. As soon as the beginner has the room well in hand, instruction in the branches should begin. Here, again, the critic must know whether it is better to let the beginner flounder for awhile, or to take hold and "straighten things out." It depends! "Heady novices" oftentimes are helped by running against the wall. A sympathetic critic—I do not like the word "critic" in this connection—can watch several rooms; but a majority of the critic-teachers I have seen at work were pedantic hinderances instead of helpers. The best helpers are those who sit quietly in the room, and then, when the session has closed, talk with the beginner over the work, asking her why she did this or that—approving the good, and suggesting remedies for what was poorly done.

B. C. GREGORY, *Supervising Principal*, Trenton, N. J.

1. If pupils are to be permitted to enter who have not completed a high-school course, I would *postpone* the time of entering; that is to say, the maturity will come earlier if the development is aided by the high school than if it is not thus aided. Thus the high-school requirement naturally leads to eighteen as an average age of entrance; but if the pupil has not had the advantage of a high-school course, I should hesitate to concede him an equal maturity for two or three years after that age. But, as the undergraduates of high schools and grammar schools who enter the normal schools are of less age than the high-school graduate, the practice of normal schools in admitting these persons is to reverse the action of the law suggested by my opinion as above. If my position is correct, the immaturity of many normal-school pupils is worthy of serious consideration. For, if a girl leaves the high school before completing the course, this act ought not to hasten her entrance into the normal school, but ought the rather to postpone it beyond the time when she would have graduated from the high school.

5. The question seems to imply that a certain section of the year should be given to the one kind of training, and a certain section to the other. In my judgment, the best method is found in carrying on the two kinds of training simultaneously. If possible, I would have a part of each week given to teaching, and a part to principles, etc. This plan enables the pupil-teacher to revise her theories in the light of experience; it gives her something of the experience of a regular teacher. Much of the instruction in principles and methods can be appropriated only if put to the test of trial. It is the old law of "education by doing," which applies to the normal pupil equally with the primary pupil. But if the instruction in theory is given in a lump, and the practice taken in the same way, much of the theory will not be digested, and will find little expression in the teaching. In the work of the regular teacher, progress comes from testing a theory, which, being found imperfect, is reconsidered and retested. The normal-school course should follow this hint. I would, therefore, carry the practice of teaching throughout the whole course, giving it very nearly one-half the time.

6. In my judgment, much of the time spent in teaching psychology in normal schools is lost. I do not think that too much time is spent on the subject, but that the teaching is not conducted in such a way as to result in much good; indeed, I would spend more time on the subject than is usually given to it. I would have the usual course in theoretical psychology, but I would have it much simpler than is usually the case. Then I would have an additional course in applied psychology, bringing the subject into actual touch with the details of schoolroom work; this is generally left out; it is the pathology of the subject. To be effective, this course must be constantly subjected to verification through the experiences of the classroom. My distribution of the time allotted respectively to the principles and to the practice of teaching (see 5) is necessary to carry out this idea.

10. My opinion is that this branch of pedagogy requires considerable maturity. It comes properly at the end of a normal course, when the pupil has been trained to consider principles of education rather than devices, and when the habit of psychological thinking has been developed; then the student is prepared to consider the historical evolution of the principles of which she has already some practical knowledge.

14. The most valuable kind of criticism is given, however, in the critic class. This class should be held once a week, and should be presided over by the critic-teacher or principal of the training school. The criticisms on each pupil-teacher should be read in class. At first there is sensitiveness on the part of the pupil-teacher, but my experience is that, where the matter is managed wisely and kindly, this feeling disappears. The error of one pupil-teacher reported by a training teacher is often a typical error, which easily might have been the error of any other member of the training class. The general discussion of the points of criticism in open class proves exceedingly helpful and stimulating to all present.

PAUL H. HANUS, *Assistant Professor of the History and Art of Teaching*, Harvard University, Cambridge, Mass.

2. The first element of professional training for secondary-school teachers is *scholarship*. Without a full and ready knowledge of the subject he has to teach—a knowledge which extends in scope and thoroughness far beyond what is required of his pupils—no teacher, whatever his natural or acquired teaching power may be, can become, as he should, the trustworthy, inspiring, and vigorous leader of his pupils. In most instances, failure to attain a respectable standard of achievement even as a mere classroom teacher is due more to the want of scholarship than to deficiency in teaching power. Scholarship is therefore fundamental. Besides being comprehensive in scope and thorough in quality, it should cover special proficiency in that one subject or group of closely related subjects which the future teacher expects to teach. Such scholarship is possessed by college graduates who have made good use of their opportunities. Hence only such college graduates, or persons who

give evidence of attainments in scholarship equal to those of such graduates, should be considered eligible to positions as teachers in secondary schools.

But scholarship, though fundamental, is not enough. The future teacher must learn how to use his knowledge wisely and effectively *as a teacher*. The secondary-school teacher is primarily not a teacher of subjects at all, "but a teacher of minds by means of subjects." To teach the subject, to be a specialist pure and simple, that is the function of the college or university professor.

The secondary-school teacher must learn how to use his subject *as a means of discovering his pupil* as well as of instructing him. Before he can develop his pupil's interest and power, he must know what they are. Having discovered his pupil, he must then learn how, with the help of instruction, he can best promote the pupil's development.

The well-trained secondary-school teacher must therefore be more than a classroom teacher, important as his work in the classroom is. He must extend his horizon beyond his own subject and his own immediate duties. He must see his subject in its relation to other subjects. He must study it so as to form a just estimate of its educational value. He must see the relation of his own daily work to that of his fellow-workers. He must therefore obtain a clear conception of the *aims and means* as well as of the *methods* of education, in order that he may develop the *conscious purposes* that should determine the whole nature and quality of his work. He must also learn how to provide for his pupils the most salutary physical environment, and how he can best promote their normal physical development. To inculcate such a conception of the teacher's work is the function of *educational theory*. The second phase of professional training for secondary-school teachers is, therefore, *educational theory*, which comprises :

- (1) The study of the *scope and meaning of education*.
- (2) The study of *psychology applied to teaching*.

Such a study presupposes some acquaintance with psychology as a science, and means such a further study of the mind *and of its development* as will enable one to enter into the mind's processes in acquisition and to realize a youth's mental life. To this end the teacher must learn that he now studies psychology, not for its own sake, but for the sake of his pupils ; that he is not to attempt new discoveries in psychology, but to acquire for himself a new mental attitude ; that he is to learn how to trace the links in a chain of complex mental phenomena, how to facilitate the accomplishment of a difficult task, how to promote a gain in will power, the birth of a new impulse, or the development of a new affection. Such a study of psychology should aim to develop in the future teacher the spirit and attitude of the observing naturalist. It should be begun through lectures, *supplemented by a careful study of the work of the most inspiring and successful teachers in their classrooms*; but such a study of psychology should become the lifelong habit of the teacher, and its best and most fruitful results are not attainable until he *teaches his own classes in his own school*.

(3) The study of (a) *educational values* and (b) of the *correlation of studies*.

(a) This means an attempt to make clear the characteristic efficacy of the several subjects in promoting the realization of the aim of education, and to determine their relative values in this regard. Such study gives the teacher perspective. While it dignifies his own subject, it enables him to see what it cannot do as well as what it can do. He learns its *specific* and its *general educational values*; *i.e.*, he learns to what extent its data are involved in other subjects, and how far its method is applicable to other subjects, and to what extent its data and method are restricted to its own range.

(b) This means the endeavor to find and provide for the many natural associations between the different subjects of instruction, so that the pupil's acquisitions may thereby gain in significance and permanence; and also that the development by the pupils of the important habit of seeking and holding fast the relations between all their acquisitions, may be promoted.

(4) Some study of the *general principles of method*. Broad generalizations only are desirable. Method is best studied in detail in the form of methods of teaching individual subjects in which general principles are applied and illustrated.

(5) The study of the *general principles of discipline*, including moral training.

(6) The *general principles of school hygiene*, including (a) *the hygiene of buildings*, (b) *the hygiene of pupils*.

(a) Including systems of heating, lighting, ventilation, and school furniture.

(b) Including the general laws of health and physical culture.

3. The third feature of professional training is the *history of educational theories and practice*. In education, as in all other human activities, we cannot dispense with the lessons of past experience. "If we ignore the past, we cannot understand the present or forecast the future." Hence the future teacher should study the history of education in order that he may become acquainted with the most important educational classics, and thus obtain foundation for the criticism of present theories and practices in the light of their historical evolution, and incidentally acquire many rules for guidance in the actual work of teaching. Such study naturally includes a brief consideration of education in Greece, Rome, and the middle ages. Much more attention should be given to the history of education and teaching since the Renaissance in Europe (England, France, and Germany), in order to trace the gradual development of modern ideals and practice, and to the history of education and teaching in the United States. Such work, in addition to the instruction, should require much reading on the part of the student, and frequent historical and critical summaries and essays.

4. But the professional student cannot be content with scholarship, educational theory, and the history of educational theories and practice. He must study the *organization and work of present school systems in actual operation*; he must know the constitution, powers, and duties of school committees; he must be familiar with

the means available to the teacher for the realization of his ends ; he must know some of the practical daily problems of organization, management, and teaching, and must learn how those problems are to be met.

The fourth feature of professional training for secondary-school teachers, and for those who look forward to the higher positions in the educational field generally, is, accordingly, the *study of the organization and management of school and school system, including courses of study, supervision, and teaching.*

Such study should enable students to become familiar with and to understand the organization and administration of schools and school systems through direct observation and comparative study. In studying the school systems of American cities, a detailed examination of their courses of study should be undertaken, and the principles on which any course of study should be based should be discussed. The duties of superintendents, principals, and teachers should be considered. Attention should be given to details of school management, such as the management of classes, examinations and promotions, discipline ; and some attention should be given to methods of teaching the elementary subjects. Students should observe, under direction, the administration and work of public schools and school systems, and of academies in the vicinity. Such study of the actual work of teaching and administration should be pursued regularly and persistently ; at first for general impressions, then for details. Frequent reports of the visits for such study should be made, orally and in writing, and these reports should give rise to much classroom discussion. In this way each student should make a general comparative study of many schools, and a more detailed study of the teaching in all the grades, including the high school, of at least two school systems in his vicinity, if the locality affords opportunity for such study ; otherwise this detailed study should cover the teaching in all the grades of at least two schools below the high school, and, of course, the high-school grades as well. Students should also be required to acquaint themselves with any supplementary activities of the schools they study, such as the work of literary or scientific societies or clubs. Meanwhile they should follow a prescribed course of reading on administration and teaching, and the instruction they receive should aim to make all their work significant and serviceable. Toward the close of the period devoted to this study of administration and teaching an opportunity should be given to students to specialize in the direction of the particular subject or subjects they expect to teach. In that subject (or those subjects) the student should study carefully all the teaching resources—text-books, reference books, and apparatus—and present critical estimates of the relative values of the books and apparatus he finds in use, or which he himself recommends ; and he should study with special care the teaching of that subject (or subjects) from the beginning, wherever they may be, through the high school.

Finally, each student should be required to submit a thesis on the organization and administration of a city school system, in which

special attention should be given to the course of study, together with direction for its rational and effective administration. In this thesis particular attention should, of course, be given to the student's specialty, for which all the details of the course of study, teaching resources, and methods of teaching should be fully treated.

Also, near the close of the period devoted to the work just described (or after that work is completed), systematic instruction in methods of teaching the several subjects in a secondary school course of study should be given by college instructors and by the best instructors that can be procured from the secondary school.

Through their study of the teaching in the schools, the students have learned how portions of the different subjects are taught by individual teachers. Such study was necessary in order to render a systematic presentation of the methods of teaching the several subjects significant. They still need a systematic presentation of the method of teaching each subject for the sake of definiteness and completeness. Such instruction should be obligatory for each student so far as his own specialty is concerned. It should, of course, cover the planning and methods of conducting class work under the conditions obtaining in public schools and academies.

When this work has been completed, two or three State school systems and two or three European systems—say the school systems of England, France, and Germany—should be studied. Every college or university offering opportunities for professional study ought also to provide special opportunities for teachers already in service who seek assistance and guidance in the study of their profession, or who wish to make a special study of particular problems. Such opportunities many teachers will find in the work already described ; but for the most advanced students a pedagogical seminary should be provided. In this seminary, topics for prolonged study should be suggested by the instructor or proposed by the students. Each man having selected his topic, the work should proceed by the usual methods of university study ; namely, investigation and discussion.

A model school, which in the construction and complete equipment of its building should exemplify the best modern ideals, which should comprise all the grades from the kindergarten through the secondary school, and which in its organization and work "should represent the finest results of the teaching art," would be an invaluable aid to the student of education and teaching. Such a school should exhibit in itself all the best features of all the schools which the students have studied. It could never render unnecessary the comparative study of schools and school systems described above : for the students need breadth of view ; they need to know *what is* as well as *what should be*, and what the conditions are under which they will have to attempt the realization of their ideals. This breadth of view and this knowledge can be obtained only by studying the schools as they are. Such a model school should be placed in charge of the professor of education and teaching, and it should be independent of all control except that of the college or university authorities.

Such a school would be a model school in the proper sense of the term ; it would not be used by the students for "practice-teaching." No school can be, at the same time, both a model school and a practice or experimental school. There can be no satisfactory practice-teaching—*i. e.*, no teaching that is really worthy of being considered "apprenticeship teaching"—unless the students carry, for a sufficient time, the full responsibilities of the regular teachers. But in that case the school would manifestly not be a model school. A school in which much of the teaching was done by inexperienced teachers could not exemplify the highest teaching art.

Concerning the utility of practice teaching, in general, except that of an enlightened beginner carrying the full responsibility of a teacher in charge of his first school or class, I have grave doubts. I am inclined to believe that the best preparation for shortening and rationalizing the inevitable period of experimentation which every inexperienced teacher undergoes is the scholarship, professional insight, and enthusiasm, provided for in the training described above, without the attempt to force experience in teaching—an attempt that is almost sure to check enthusiasm and spontaneity, and may substitute mechanism for life in the teacher's work.

Provision for such professional training as has been described should be made by every college and university the location of which renders the actual study of many schools possible. When the location is unfavorable to such study, so much of this training should be provided as can be profitably undertaken. College men who look forward to teaching in secondary schools will never seek professional training at the existing normal schools, and it is not desirable that they should. The difference between the scholarship and developed intellectual power of a normal-school student and of a college man is too great to make it possible or desirable to give the college student his professional training at the normal school ; and the college education is a fundamental requisite for the secondary-school teacher. The professional training of the college man must, therefore, be provided by the colleges and universities, if at all. The necessity for such training is no longer in dispute. It only remains for principals of secondary schools and superintendents now in service to demand professional training for all teachers, and to induce their school committees to re-enforce this demand by making it difficult for any inexperienced teacher, who has not had professional training, to find employment, in order to cause the colleges and universities of the country to make suitable provision for such training. The duty of principals and superintendents to the profession is plain. Will they do it ?

B. A. HINSDALE, *Professor of Pedagogy*,
University of Michigan, Ann Arbor, Mich.

1. If normal schools or training schools were organized on the proper basis, as sometimes they are, I should say the minimum age ought not to be less than eighteen or nineteen. That is the age at which the average high-school pupil finishes his high-school course.

2. With the qualification inserted in the first answer, I should say that requirement for scholarship in all the branches named should be equal to the standard attained by a good high-school course.

3. High-school diplomas may be properly accepted, provided the normal-school authorities have examined the work done in the high school, including its course of study, and have found everything satisfactory. Four years should be insisted upon in all cases where the elementary grades are only eight in number. Pupils coming from inferior high schools, or from high schools with which the normal school is not in touch, should be examined.

4. If a preparation equal to that described above can be secured, then a two or three years' course would be sufficient, say two years upon the average; but if the normal school is based on the elementary school, as is so often the case to a great extent, then the normal-school course should be six years, as it is in Germany.

5. From one-half to two-thirds of the time should be devoted to study and discussion of the principles of education, etc.; the remainder to practice and to criticism of practice.

6. A text-book in psychology as extensive as Baldwin's elementary book (J. M. Baldwin) should be thoroughly digested. Pupils should prepare and recite lessons, and the whole subject should be illustrated by the teacher or professor.

7. Along all the great lines of child development, physical, mental, moral. By mental I mean not merely intellectual, but the whole range and compass of mental activity.

8. I have no expert opinion on this subject.

9. Principles of education must be deduced from the study of the mind, and from the study of the world, or knowledge, brought into relation. I mean knowledge in the objective sense. It is not sufficient to study psychology abstractly. The relation of various kinds of subject-matter to the mind must also be included. The method may be inductive or deductive, or a combination of both. The latter is no doubt preferable. Sometimes principles may be deduced from facts, but it is equally permissible to state the principles and then confirm and illustrate them by facts.

10. The main lines of educational thought and practice should be followed, particularly since the Renaissance. If the subject is followed intelligently, it will have large culture value. It may be made practical by criticism of false or imperfect views, and of vicious or faulty methods of teaching and government and of school administration.

11. All of the four methods suggested should be combined in judicious measure. Stress should be laid upon the practical side.

12. I think the plan of having a model-teacher placed over every two classes a very good one. I do not think the plan of a model-teacher for each class desirable; it tends to beget dependence and weakness. On the other hand, if there is only one critic-teacher for several pupil-teachers, the oversight is likely to be insufficient.

13. I am hardly prepared to suggest a plan. It scarcely seems to me a "plan" can cut much of a figure. What is wanted is intelligent observation, and that can hardly be reduced to an art.

14. Some suggestions can be made to the pupil-teacher while the work is going on, if they are made in the right way ; but most of the criticism must be made after the school is dismissed. It may be either individual or collective, as the circumstances determine. If the same faults have been observed in two or more pupil-teachers, those faults may be discussed in their common presence ; but much individual work of this sort will be found necessary.

15. I should not favor the employment of both critic-teachers and model-teachers. The model-teachers should be critic-teachers. The teacher of methodology should also exercise particular oversight, and criticism should be limited to the teacher of methodology and the model-teacher. The pupil-teacher's responsibility should not go beyond two persons. If critic-teachers are employed, and not model-teachers, the answer to the question is, of course, obvious.

16. If normal schools could be organized on what I conceive to be an ideal basis, academical work, properly so called, would be excluded. The only subjects in which formal instruction would be given would be the principles, methods, and history of education, and in the sciences out of which principles and methods of education grow. Still I am inclined to think that it might be well to provide in a normal school for a certain amount of review work in academical studies, for the purpose of keeping the mind of the pupil fresh and bright in these subjects. It is important to keep the minds of such pupils facing outward toward the great kingdom of knowledge. I have spoken of what I conceive to be the ideal. Few, or none, of our normal schools are ideal, however, in my judgment. No doubt it would be found impossible at present to carry out my ideas. These ideas are not carried out in the normal schools of Germany. Most of the work done in the six-years' courses in the normal schools of Saxony, for example, is done in studies, and not on proper professional lines. For the time being, we are no doubt compelled to accept a large amount of academical work in the normal schools ; but I think it is desirable steadily to raise the standard of requirement, and steadily to increase the amount of professional work.

17. I know of no particular tests of efficiency that can be applied to such case. The tests are obviously the same as in a school taught by a regular teacher, but somewhat differently applied. The factor of oversight will, of course, be far more prominent. The critic-teacher, or model-teacher, and the teacher of methodology, will naturally look after such teachers much more closely than the superintendent or supervisor will look after the ordinary teacher ; still, the final test of efficiency must be the answer to the question, whether the child learns.

18. The diploma of a normal or training school should stand for a certain amount of scholarship, directly or indirectly ; for a certain amount of professional study ; and for a certain amount of training. As to general scholarship, the diploma would testify directly when a large amount of academical work is done in the school ; indirectly when the normal school looks to the high school or academy for general preparation.

I dismiss the subject with observing that my answers have respect to a general ideal much more directly than to the state of things now existing. If I were the principal of a normal school, the practical problem for me to solve would be to apply the general ideas that I have expressed to a particular situation.

J. L. HOLLOWAY, *Superintendent of Schools*, Fort Smith, Ark.

4. If the word be confined chiefly to professional training, the minimum length of the course should be two years. When it is necessary to supplement to a larger extent the professional with scholastic instruction, the usual four-years' course seems to be the most practical.

5. As a rule, the lines should be about equally divided. The natural endowment and tact of the individual is a determining factor. Many have the faculty of imparting knowledge and are born to lead; others are good theorizers, but poor tacticians and executors. The normal-school teachers have the same problems to handle that confront the public-school teachers daily; viz., individual aptitudes, varying temperaments, and other elements of the personal equation.

7. The activity or torpor of certain mental or moral faculties under the excitant of specific instruction or example, the responsiveness of children to certain methods of procedure in their daily training, and the bearing of temperament as related to teaching and discipline, constitute a field of original research at once interesting and valuable. Indeed, I believe until such data are procured and thoroughly assimilated in the professional life of teachers, teaching will remain as it largely is to-day and ever has been—a species of empiricism.

14. This will depend largely upon the disposition of the pupil-teacher. A good plan is to require observing pupils to draught criticisms, which are first inspected by the model-teacher, and to submit only such as will be most helpful to pupil-teachers and the class. In other cases it is well to have a running discussion take place immediately following the dismissal of the class in the model school.

ELLEN HYDE, Framingham, Mass.

3. I should prefer to accept the diploma and throw all responsibility for scholarship on the preparatory schools.

6. Enough to teach the teacher to examine his own mental states and processes, and to observe with interest and some degree of insight the mental exercises and growth of children. Empirically by introspection and observation and as a science of mind, not as mere neurology.

12. A school for practice cannot be a "model" school. In a practice school long experience leads me to the belief that in order to do justice to both pupils and pupil-teachers, and to keep the school efficient, there must be a responsible permanent teacher in every room, whose principal work and care shall be to keep the

school up to grade, and the pupils in right mental and moral condition. In addition there must be a sufficient number of critic-teachers to give careful observation and criticism to the work of the pupil-teachers.

GEORGE H. MARTIN, Lynn, Mass.

7. During the period of training, the students should use chiefly the results of other people's observations of children. But they should be taught the most profitable lines of child-study and the best methods of pursuing them.

12. In my judgment, a *model* school and a *practice* school should be two distinct institutions, with different functions and a different organization. In the model school each class should have its own teacher, whose work should never be interrupted by apprentices. In the practice school the pupil-teachers should have full charge of classes for a limited time, under the supervision of experts.

F. F. MURDOCK, Bridgewater Normal School.

6. Psychology should appear twice as a distinct subject in the normal programme.

(1) At the beginning, the mental activities should be observed sufficiently to enable students thereafter to recognize the activities employed in gaining knowledge while acquiring the knowledge.

(2) At the end of the course, to derive (?) the data for the science of psychology, or so much of it as is necessary for intelligent and appreciative application of fundamental psychological and pedagogical truths.

The knowledge should be acquired under skilled direction: (a) by observation of self-activity, of activities of other adults, of child-activity; (b) by directed reading and discussion.

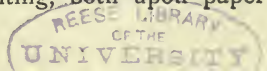
10. History of education—to be worked out on the "laboratory" plan, the range of books and passages being to a considerable (two-thirds) degree indicated by the instructor. Afterward a brief compendium should be used as a means of review if desired.

So much should be learned as would enable students to know and appreciate the valuable addition which each educator studied gave to education, thereby increasing zeal and willingness to learn and profit by the experience of the past; *i.e.*, to use all the good thus far acquired in educational "wisdom."

FRANCIS W. PARKER, *Principal of the Cook County Normal School*, Englewood, Ill.

1. Eighteen years of age, with exceptions.

2. It is impossible to state requirements for scholarship to enter such a course, in terms of quantity in the studies named from (a) to (I), inclusive. A good knowledge of all these subjects, with the exception of foreign languages (*j*), is necessary, and should include a very important mode of expression—writing, both upon paper



and the blackboard. The requirements, however, should consist of love, system, ability, and persistence in educative work. I look upon the developed ability to observe, to experiment, to investigate, and to reason, as the essential thing, and not the number of studies or amount of ground gone over. If, however, the pupil has learned to use mental power economically in each and all the subjects named, the basis for personal work would be very much stronger. There can be no marking, measuring, or weighing of quantity learned. My experience is that most pupils who enter from colleges and high schools into the professional training class fail in the essential knowledge of the subjects they have already studied, and in habits and methods of study.

3. Requirements for admission to normal schools depend upon circumstances. Pupils presenting a diploma certifying to a four-years' course in a good high school should be admitted without examination. High schools should be examined upon their pedagogical work, and put upon the list of accredited schools if the teaching and training is satisfactory.

4. Should be at least two years.

5. Impossible to answer the question. All the study in the professional training school should consist in the study of principles and methods of education, and adaptation of subject-matter; should be, in fact, a direct preparation for the immediate practice of teaching. Pupils, when they enter a professional training school, should have their attention turned at once toward the work they are to do, and every step of the work in psychology, principles, methods, and the acquisition of knowledge, should be aimed at the practice. Pupils should be in, or should join in, classes of practice at least one hour each day during the whole course.

6. That psychology which is necessary to the understanding of the principles of education should be studied inductively.

7. Observation of children, psychologically and anthropologically, should be made a principal factor in the study of psychology. If by observation is meant the observing of lessons given by practice-teachers, I should say it is of little or no value.

8. I have not sufficient expert knowledge to answer the question.

9. All the principles of education should be derived directly from the laws of the mind. To answer the question "In what way?" is to present the whole subject of the science of education.

10. The main lines of the history of education should be studied; the lives of great teachers and reformers in education should be known, for instance, Socrates, Comenius, Ratisch, Franke, Girard, Pestalozzi, Diesterweg, Herbart, Froebel. The history of education should be turned upon the study of the principles and methods of education.

11. Refer you to plan given in report (sent herewith) of the Cook County Normal School.

12. There should be a regular teacher placed over each class or room. It is a great mistake to have a model-teacher, so called, placed over two rooms. All the practice-teaching should be under

the immediate direction of a critic-teacher or regular teacher of a room, and this teaching should be supervised by the special teachers in the different departments of the normal school.

13. The whole corps of teachers of a normal school should devote themselves to the careful observation of the work of pupil-teachers; I should prefer that term to *model*-teachers.

14. All criticism should be private and personal. The critic-teachers and special teachers should observe with the greatest care the work of the pupil-teachers, and ascertain their main faults, and the criticism should be made in order to direct the attention of the pupil-teachers to their own mistakes, and how they can be obviated.

15. Criticism should be made by all the teachers in the normal school.

16. In a strictly professional training school, a school parallel with a school of medicine or psychology, there should be no strictly academic work.

17. A pupil-teacher's efficiency should be tested by the ability to govern, teach, and train classes of pupils.

18. Diplomas should be granted upon the ability of a pupil to teach school.

SARAH E. SCOTT and EMMA L. JOHNSTON,
Training School for Teachers, Brooklyn, N. Y.

2. The scholarship resulting from a twelve-years' course in English, mathematics, natural science, physical culture, music, drawing; an eight-years' course in history; a two-years' course in Latin, and a one-year's course (at least) in a modern foreign language.

7. At first the child-mind should be studied from books and by means of lectures. When pupil-teachers have learned the formulæ for observation work, they may be given opportunity to record and report observations of particular children.

8. The sense-organs, especially those of sight and hearing, should be tested. This is done in order to seat children properly, to regulate the light, the blackboard work, and the amount of individual attention bestowed. The ordinary letter-cards and the voice may be used for these tests. The elaborate apparatus used in some universities is out of place in the ordinary city training school.

9. During the first half-year of the course, the students should be led to deduce the principles of pedagogy from the truths of psychology. During the next year the students should be taught to apply these principles to methods of teaching. During the fourth half-year, pupil-teachers should use these principles as the basis for a criticism of the lessons observed or given by them in the practice department.

11. By writing outlines before lessons are given, and after principles have been discussed. By giving certain lessons to fellow pupil-teachers for the purpose of awakening discussion and criticism—the lessons being those intended for the older children. Lectures may prepare the way for these outlines of lessons, and

the outlines may furnish texts for other lectures. Books and periodicals devoted to methods may be used after pupil-teachers have been led to devise methods of their own.

17. Until a pupil-teacher has shown by her responsiveness in the daily lessons that she possesses the power to comprehend the principles of pedagogy, she should not be allowed to outline lessons for children. Until she can write a good outline of a lesson, she should not be allowed to give the lesson. Until she can give the lessons previously outlined by her and criticised by her teachers, in such a way as to hold the attention of a class of children, she should not receive a diploma.

APPENDIX II

OPINIONS SUBMITTED TO THE SUB-COMMITTEE ON THE CORRELATION OF STUDIES IN ELEMENTARY EDUCATION

The following are the questions in answer to which the opinions were written :

1. Should the elementary course be eight years, and the secondary course four years, as at present? Or, should the elementary course be six years and the secondary course six years?

2. Has each of the grammar-school studies—language (including reading, spelling, grammar, composition), mathematics (arithmetic, algebra, plane geometry), geography, history, natural science (botany, zoölogy, mineralogy), penmanship, drawing, etc.—a distinct pedagogical value? If so, what is it?

3. Should other subjects than those enumerated in the second question, such as manual training (including sloyd, sewing, and cooking), physical culture, physics, music, physiology (including the effects of stimulants and narcotics), Latin, or a modern language, be taught in the elementary-school course? If so, why?

4. Should the sequence of topics be determined by the logical development of the subject, or by the child's power to apperceive new ideas? Or, to any extent by the evolutionary steps manifested by the race? If so, by the evolution of the race to which the child belongs, or that of the human race?

5. What should be the purpose of attempting a close correlation of studies?

(a) To prevent duplication, eliminate non-essentials, and save time and effort?

(b) To develop the apperceiving power of the mind?

(c) To develop character,—a purely ethical purpose?

6. Is it possible on any basis to correlate or unify all the studies of the elementary school?

7. If not, may they be divided into two or more groups, those of each group being correlated?

8. Is there any way of correlating the results of work in all the groups?

9. What should be the length of recitation periods in each year of the elementary-school course? What considerations should determine the length?

10. In what year of the course should each of the subjects mentioned in questions 2 and 3 be introduced, if introduced at all?

11. In making a programme, should time be assigned for each subject, or only for the groups of subjects suggested in question 7?

12. How many hours a week for how many years should be devoted to each subject, or each group of subjects?

13. What topics may be covered in each subject, or each group of subjects?

14. Should any subject, or group of subjects, be treated differently for pupils who leave school at twelve, thirteen, or fourteen years of age, and for those who are going to a high school?

15. Can any description be given of the best method of teaching each subject, or group of subjects, throughout the school course?

16. What considerations should determine the point at which the specialization of the work of teachers should begin?

17. On what principle should the promotion of pupils from grade to grade be determined? Who should make the determination?

EMILY G. BRIDGHAM, *Grammar School No. 3*, Brooklyn, N. Y.

9. The attention of young children cannot be long sustained upon one subject, and primary instruction should be presented in smallest details. The length of period of recitation cannot be exactly prescribed, as the lesson should cease whenever interest flags. No child in elementary school can, with profit, be kept longer than forty minutes upon a memory, or verbal, recitation; in the primary grades, twenty minutes should be the maximum.

Considerations which determine length of recitation should be :
1. Interest in the subject; 2. The relation of the subject to other topics of the day; 3. The relation the portion of lesson bears to portion assigned the class.

10. The introduction of any study into school course should be guided by its relation to child's present experience and lines of interest. Too many studies are advocated because of their supposed practical usefulness in after life.

When the broadest view of a teacher's work becomes more nearly universal, and when very much less teaching is done for examination, there will be no danger in crowding the curriculum of infant years. "Children are not worked to death," says President Eliot, "but they are bored to death." It is better to give many subjects of many-sided interests to children, rather than dole out to them a few matters for the sake of thoroughness in them. The powers of observation, which children possess in such keenness, should have abundance of material for their fostering. Children may, at first, be permitted to flit from flower to flower, before settling down to thorough detail; for thoroughness requires a concentration of mind and a tenacity of purpose not to be expected of the young.

Language (except grammar and composition).....1st year.
(Synthesis of sentences as soon as permissible.)

Composition.....5th year.

Technical grammar.....7th year.

Arithmetic.....1st year.

(Number first presented in concrete, as soon as possible taken in abstract. Examples requiring maturity of thought omitted in grades below high school.)

Algebra. Taken slowly; equation made prominent.....7th year.

Geometry (inventional).....last half of 7th year.

(With *time* given for inventive genius to bud.)

History.....5th year.

(Narrative from general history, leading to biography and American history.)

Nature studies.....4th year.

(Observation-work 1st year.)

Penmanship and drawing and music.....1st year.

Physiology.....7th year.

Physics.....6th year.

Physical culture.....1st year.

17. If success of a teacher were not so frequently based upon results of her class at final tests, thus rendering her loath to part

with creditable pupils, promotions should take place whenever child is able to do work of succeeding class.

Pupils who fail to do the work of a grade in the time allotted would be greatly benefited by reviewing the work with another teacher, and perhaps with different books. The establishment of duplicate grades, at certain points, would prove advantageous.

Class teachers are not infallible in the estimate of their own work ; therefore, as a requirement for promotion, it seems advisable to use, in addition to teacher's estimate, a written test made by some one else.

Examinations have been greatly abused, it is true ; but this abuse has arisen from lack of pedagogical skill, for these crucial tests need not always occur at close of term, nor need they ever be held at announced or stated periods.

A written examination along same lines which teacher has pursued, and conducted by a principal whose supervision has been a guidance and an inspiration, would, in my judgment, result in improved material for advanced classes.

W. M. BRYANT, *High School*, St. Louis, Mo.

1. Elementary course ought to remain eight years, as at present, especially on account of difference in modes of discipline.

2. I consider the pedagogical value of the grammar-school studies to be as follows :

(1) *Language* is the objective form of thought. Concepts can be matured only through mastery of names as objective forms of concepts. *Spelling* (always written, of course), in connection with elementary etymology, aids in rendering concepts precise through the more precise apprehension of their objective forms. *Grammar* classifies the mind through the whole range of logical forms ; "terms" (as objective forms of concepts) being specially defined through etymology, "propositions" through the study of simple sentences, and the "syllogism" (informally) through the study of complex and compound sentences. In etymology, the child is familiarized with the *elements* of thought (*i. e.*, concepts). In syntax, he is exercised in the analysis and synthesis of the actual forms of explicit thought, which consist, first, in the comparison of concepts, and, second, in the comparison of judgments (through their objective forms, *viz.*, propositions). *Reading* is the practicing of the critical power thus trained, while composition is (predominantly) the practicing of the constructive power thus developed.

(2) *Mathematics* has the pedagogical value of strengthening the demand for precision of forms. It insists upon perfection of results, refuses credit for approximate results. In arithmetic and algebra it compels attention to the relations involved, through extreme abstractness of the symbols employed. The study of geometry disciplines the imagination to rigid exactness of form. It disciplines the understanding to the recognition of identities in types of forms. The *limitation* of mathematics is that it emphasizes

identity to the exclusion of differences, rather than identity as in the midst of differences ; that is, it subordinates difference to identity instead of co-ordinating it with identity. It even attempts to eliminate the difference between difference and identity ; as when it atomizes the curve, and thus sees in it only a succession of "straight lines," these being conceived to be such only when "infinitely short," *i. e.*, only when they have ceased to have dimensions, *i. e.*, when they have ceased to be lines at all. It deals, in fact, only with extensive quantity, and ignores intensive quantity in its essential character of *quality*. Mathematics thus proves inadequate as a means to discipline the judgment. This, indeed is no "fault" of mathematics, but only its inherent *limitation*.

(3) The pedagogical lack on the part of mathematics is supplied, in simple form, by the *natural sciences*. In its entire range *physics* is, in large measure, nothing else than applied mathematics, and hence extends discipline in intellectual habits of precision. But, also, as dealing with concrete phenomena, it serves to exercise both understanding and judgment : the former in recognizing identities (classifying modes of energy, the special forms involved in applied mechanics, etc.); the latter in estimating differences (as of fibers of materials, various phases of strain, effects in change of form of mechanism, as in levers).

Yet within the sphere of the grammar school but little of explicitly quantitative physics can be made use of. Only the descriptive phases illustrated by actual experiment and embodying in the simplest way the fundamental principles of the science can be successfully dealt with by pupils under fourteen years of age. For such pupils (those of last four years of grammar-school course) a graded series of experiments has the pedagogical value of stimulating carefulness in observation of details, on the one hand, and of awaking interest in the universal (however abstract and mechanical) aspects of energy, on the other. *Chemistry*, again, even in such simple experiments as are applicable here, not only reveals the special relation between quantity (in its extensive aspect) and quality (which is merely quantity in its intensive aspect), but it also opens the way for the comprehension of the inner mechanism of organic processes. And, again, the elements of *biology* serve specially well as a means to cultivate the power of accurate observation (*i. e.*, the exercise of perception regulated and clarified through direct subordination to reflection), just as they serve further to awaken the mind to a recognition of the universal and (as compared with those unfolded in physics) highly concrete aspects of energy as manifested in the various types of organisms, including the whole process of the evolution of the individual as the concrete embodiment of the type; work specially adapted to exercise of judgment.

(4) *Geography* is the co-ordination of organic and inorganic forms with special reference to place of abode and means of subsistence for man ; as

(5) *History* is the tracing of the process of human evolution as taking place under such conditions. It is, in fact, through the study of the natural sciences, supplemented by geography and his-

tory, that the individual is made clearly aware of the world as his own immediate, concrete, inexorable "environment" in the sense of that total-sum-of-conditions upon actual rational relation with which his own evolution as a normal individual depends. The study of the natural sciences (whether in elementary or advanced form), supplemented by the study of geography and history, has, therefore, this twofold pedagogical value: (*a*) that in such study the mind is trained intellectually to observation—*i. e.*, the recognition of universal modes of energy and types of forms as manifested in particular examples; and (*b*) that there is awakened and stimulated the ethical conviction that only through law and order is any real life for man attainable.

3. I consider *manual training* desirable as part of elementary education in so far as it serves to render pupils clearly conscious (1) of the peculiarity of textures of woods and metals, etc., (2) of the chief (geometrical) forms involved in manufacture, and (3) in so far as it serves to bring eye and hand into definite practical subordination as actual *organs* of the mind. *Physical culture and physiology* I would admit to a limited measure of time and attention upon the same ground (of increased efficiency of physical structure as organic to mental function), carefully restricting them within that limit. I would include *music* as the normal, most direct, and most adequate form in which the emotional aspect of the mind can be expressed. I would introduce *Latin* as early as the beginning of the seventh year; and this for the purpose of emphasizing the significance of variation of form as a means of precisely expressing the various shades of meaning involved in the same universal concept. One of the *modern languages* ought also to be studied, beginning with the sixth or even fifth year; and this for the purpose of comparison as between different forms of expressing the same general degree of (modern) thought. For this purpose the language of one of the more highly cultivated modern nations would, of course, prove most serviceable. (The less highly cultivated nations are, in effect, not "modern.") Hence either German or French or Italian should be chosen.

The study of any foreign language (but most of all a highly developed one) must react upon that of the native language, thus rendering the consciousness of the native forms of expression more precise, and, through this, clarifying the thought and invigorating the whole mind of the individual.

* 4. Sequence of topics for pedagogical purposes must of course first of all bear reference to the order of development of the individual mind. For this reason, as far as practicable, the pupil ought to be led through observation of particular instances to the recognition that these are really *only* particular instances of universal forms, types, principles, truths. For the teacher these universal aspects are, indeed, presuppositions—having become such in explicit degree through repeated tracing of the whole ground. For the pupil they are unknown and (mainly) unsuspected. For him the course is one of discovery (induction). For the teacher the course is one (largely) of demonstration (essentially deduction,

though formally induction). It is, in truth, thus only that he can securely lead the pupil through the noting of particular facts to clear consciousness of universal principles. The process will no doubt conform mainly to the essential evolutionary steps of the race (both that particular race to which the child belongs and to the human race in general).

5. The essential purpose in correlating studies is that of perfecting the total complex medium for the unfolding of the total complex unit, mind, as at once intellectual, ethical, and (in healthy sense) emotional.

6. All studies, elementary and advanced, can be correlated under the complementary aspects of *physical and spiritual*. Outer and inner *mathematics* is the science of universal abstract *forms*. *Physics* and *chemistry* are the supplementary aspects of the universal abstract science of *forces* (modes of energy). *Biology* is the science of the fundamental concrete unfolding of *types* of organic units expressing essential modes of energy in clearly defined forms. Man is the unit in which all these converge (he is literally the "microcosm"), and hence (as intimated above) *geography* is properly to be regarded as simply a descriptive summarizing of the total sum of outer conditions of human development, as *history* is the tracing of the outlines of that development, while *language* is at once its record and also its subtlest medium.

9. Length of recitation ought to be determined by average power of attention on part of pupils of the given grade.

14. No. The subjects being chosen presumably with reference to truest growth of mind in any case.

15. No. Method is first of all and essentially an expression of the personality of the teacher. If personal idiosyncrasies are so great as to render the work capriciously only one-sided, that is evidence that the teacher has not been really educated, or that he is inherently not well balanced, and hence ought not to be allowed a place in the schoolroom at all. Sound of mind (intellectually and ethically) and well educated, the individual is his own best method. Subjected to any prescribed "method" (in point of detail), his work must become mechanical, *i. e.*, brutal—ineffective for good, effective only for evil.

16. To this I answer: *Effectiveness of total work*, (1) intellectually, (2) ethically. The higher the degree of actual cultivation and self-command on the part of the teacher employed, the earlier can specialization be profitably undertaken. Ideally it ought to begin with the beginning of the first day of the first year.

17. On the principle that those who have taught them know best what their actual attainments are. As a check upon one-sidedness of inexperienced teachers, an examination on a set of questions from the "central office" ought doubtless to be held. But in every case this again ought to be conducted and the papers marked by the teacher who has had charge of the class in the given subject.

B. T. DAVIS, *Superintendent of Schools*, Winona, Minn.

10. Elementary education should be introduced with kindergarten instruction at about four years. The child will begin by acting and doing, the handling of things and the working out, through forms, his ideas and thought as developed to him. He will begin by the handling of forms, seeing and observing; following this by making and representing, and will be gradually led from the very concrete representations to more abstract written forms, following with oral and written language, through which reading soon becomes a part, and numbers have been a concrete companion from the start. Color has also been a companion of form. Nature study has been introduced from the very start. The child has been taught to observe, interpret, and express the ideas and thoughts arising in its own environment. During the first and second years language, with all of its parts (written and spoken, etc.), including reading, science, penmanship, drawing, music, and physical culture, have all formed parts of the course of instruction, giving suitable variety to claim the child's interest and attention, and calling forth all of the activities of the child's nature. At the third year, geography should be introduced, although it has been formerly touched upon as drawing or form, with perhaps related place exercises. Although introduced as geography in the third year, it is still largely a matter of form, place, and physical representation, gaining its more distinctive character as the work progresses and the child's strength and power of comprehension increase. History should be introduced in the form of stories and biographical sketches, and more formally as narrative reading or story work, about the fifth year. Handcraft, in various forms, should be correlated with drawing from the very start. Later in the course, special drawing may find its suitable time and place in the various subjects of the course, and the drawing time may be quite largely devoted to handcraft, drawing being its constant companion. Physiology, or hygiene, and physics should hold their proper and related places in the science work above indicated. Modern language or Latin might find a suitable place in the seventh or eighth year. The elements of algebra or geometry should find a correlated relation to arithmetic, and should have a place in the seventh or eighth year in this form, while much of the more simple introductory elements of geometry have found a correlated place in form study (drawing) almost from the very start.

11. In making a programme, time should be assigned for each leading subject. Those things introduced wholly in a correlated way should have a time only as they appropriately appear in connection with the subjects of the formal programme.

12. In the first, second, third, and fourth years of the course, three hours each week should be devoted to drawing (form, color, and handcraft); three hours to reading (spelling, reader work, language, and supplementary and original composition); two and one-half hours to language; two and one-half hours to writing; three hours to numbers; two and one-half hours to physical culture and recrea-

tion ; three hours to general lessons (elementary science, history stories, fairy tales, etc.) ; the same order should be observed. In the third and fourth years, geography will find a place by increasing the time of the school day thirty minutes, giving two and one-half hours each week to this subject. In the fifth, sixth, seventh, and eighth years, history should find a place by reducing the time given to writing, reading, and general lessons. This subject should occupy about three hours each week during the last four years of the elementary course. Where algebra and geometry are introduced in part of the eighth year, it is substituted at the time assigned to numbers. Where Latin or a modern language is introduced, it should appear at the language period, which otherwise should be interpreted as English.

13. The answer to this question may be inferred in part from the answer given to number 12 in the parenthetical parts. While these topics have separate times on all formal programmes, the correlated relation should not be overlooked. The work in drawing should early become a means of expression, and find a place in nearly all parts of the programme. Language should pervade the entire programme, and in this sense the whole programme may be said to be language ; yet a language period is necessary, that some of the more important language forms and technical points relating to this subject may find a special time and a different opportunity for treatment. Spelling has a relation to every subject and a place in every subject, yet the attempt to teach spelling wholly in this correlated way is to neglect it. There must be a special time at which spelling is systematically and regularly considered. Otherwise, it is neglected, and the result is poor spelling. Reading early becomes a part of the number work, the language work, general lessons, geography, history, and music. Yet we must have a special time for reading, that will give especial attention to the expression and the details of the subject. This time may be reduced later in the course, if the work has been well done at the beginning. General lessons should have a very intimate and direct relation to language, as do geography, history (when introduced), furnishing the subjects for thought ; the thought side being developed in these classes, and the language side receiving especial attention in the language class and at the language hour. This question, to be fully answered, would require tedious enumeration. I will not expand further, but will refer you to the course of study in the manual for these schools, which I send you under another cover.

B. C. GREGORY, *Supervising Principal of Public Schools,*
Trenton, N. J.

1. I cannot see any reason for reducing the elementary course to six years. I think, however, that such a reduction is to be inferred from the recommendations of the Committee of Ten. Ordinarily I should regard the termination of the elementary course at any given point as a matter purely of convenience, were it not

for the question of departmental teaching which enters into the question. The secondary schools necessarily imply departmental teaching, and I am opposed to departmental teaching until the child has finished at least eight years of his elementary course; this involves the discussion of question 16. I am very radical on this question of departmental teaching; I do not believe in it at all at any time, but recognize that there comes a time when there is no other method possible. The scope of the subjects taught in high schools is so great that no one man can do more than obtain a fair mastery over one of them; to master several of them is simply out of the question. Departmental teaching is, therefore, forced on us, not because the teaching is better, but because several subjects cannot be mastered by one teacher; I should therefore answer question 16 by saying that the consideration which should determine the point at which the specialization in the work of the teacher should begin is the consideration of necessity. My reasons for objecting to the special-teacher system are the following:

(1) The boy during the grammar-school age needs a teacher's care. She must understand him thoroughly, and a teacher who teaches a boy in all subjects can understand him more thoroughly than a special teacher can; she could adapt her teaching to his peculiar needs with accuracy. The charge against the public schools is, that the children are taken in masses, and their individuality is not considered. The departmental system exaggerates this trouble because no one teacher understands the boy thoroughly. The class teacher can individualize her instruction; she can find out what is his peculiar bent, what subjects can be gone over rapidly, and what subjects can receive more minute attention.

(2) Related to the above is the fact that in specialized teaching just so much time, say forty minutes, must be given to each boy in each subject; each boy must have forty minutes in arithmetic, forty minutes in grammar, etc.; no other state of things is possible where the children spend a certain period in each room. Now, with the class teacher it is ascertained very quickly that some boys do not need forty minutes in arithmetic, but need sixty in language, and the teacher distributes her force so as to bring to bear upon each pupil just what he needs.

X (3) Departmental teaching makes correlation of studies very difficult. The tendency of departmental teachers is to consider each his own subject without reference to its relations. I do not say that departmental teachers do this, but that the tendency is in that direction, and to overcome this a principal must give very careful supervision, and when he has done his best he does not obtain from his departmental teachers that correlation of studies which a teacher can who is teaching the several studies to be correlated. The specialized teaching leaves out what is known as co-ordination. One of the evils of public-school teaching is, that each subject is considered entirely independent of the other, and this is a most unnatural state of things; for instance, no matter

how carefully a boy is taught writing during the penmanship lesson, he generally considers that he has nothing to do with penmanship when he turns his attention to the language lesson ; or he may be very carefully instructed in correct language during the language lesson, and if he has to write an exercise in geography he considers that the rules of language do not apply.

(4) Again, the psychological aspect of correlation, which I discuss below, has a bearing on the case ; I think it is impossible to make that psychological consideration effective if several teachers have one pupil.

(5) Again, my experience is that the moment an all-round teacher takes up departmental work she becomes narrow ; I have known a few exceptions to this rule, but the rule is as I have given it.

(6) Lastly, if any subject should be specialized, it is moral training, but moral training must take a subordinate place in the departmental system. Where a child has five teachers instead of one, nobody can become intimately acquainted with his moral nature, and I respectfully submit that this is one of the most important features of the teacher's work. The special teacher is not in a favorable position to give this training. She has to overlook it or lose the sense of responsibility which must form the basis of moral training. To the all-round teacher, moral training is an important matter. The teacher of arithmetic, on the contrary, is apt to think that her work is arithmetic, and that moral training is incidental. Moral training requires continued attention, steady effort, and this is a difficult matter where the teacher sees the pupil but forty minutes a day. The special teacher is not in a favorable position to give this training ; her responsibility is to the subject she teaches, and she is likely to overlook the necessity of moral training, or at least resort to such temporary expedients as shall secure results while the child is taking his period with her. etc

I have been a little lengthy over this question because it seems to me that it is the key to the answer to question 1. I believe that the objections I have urged against departmental teaching apply even in the high school ; but, as I have said before, in the high school the difficulty of mastering more than one subject is so great that departmental teaching becomes a necessity. I would postpone the departmental teaching to the ninth year, because I believe up to this time the boy can be more successfully handled by the all-round teacher.

I am sorry to find myself in opposition to yourself and many other educators on this subject, but, after having carefully weighed the merits of the question, and been made sadly conscious of the evils of departmental teaching in Trenton, I am compelled to maintain my position as opposed to departmental teaching prior to the ninth year in school.

2 and 3. This is a tremendous question. I fear that my thought is not sufficiently crystallized to answer you very philosophically. Will you allow me to consider questions 2 and 3 as one question, and to present my answer in a somewhat less categorical way than is demanded in your questions ? I desire to take the pedagogical

value as the heading under which I would group my answers. I do this because I can answer questions 6 and 7 and 8 in what seems to me to be a more philosophical manner than if I take up each subject by itself. The classification of values which I offer is not very scientific, but, on the other hand, rather superficial. It seems, however, to me to be sufficiently exact to furnish a basis for argument, although not exact enough to base a completed scheme of correlation on.

(1) To begin with, some of the studies relate to the physical condition ; these are hygiene and physical culture.

(2) Several of the studies bear a very important relation to the *training* of the body. Penmanship and drawing look to a co-ordination of special muscles. Manual training has for one of its purposes a very important co-ordination of muscles. Apart from the considerations of health, physical culture looks to a co-ordination of muscles.

(3) Several of the studies are partially, and in some cases principally, valuable because they furnish the automatic means by which further acquirements are made possible. Penmanship is valuable largely for this reason. Drawing is valuable to a very considerable extent for the same reason. Language, up to a certain point, is to be considered merely the automatic means by which we receive or communicate thought. Arithmetic has its automatic side, too often left out of consideration.

(4) Several of these studies have an observational phase. The natural sciences are conspicuously valuable because they train the observation. The training in language has an observational side of considerable importance, not always sufficiently considered. Manual training has a very important observational side. There is also an observational side to the teaching of language and even music. Drawing is emphatically an observational study.

(5) Related to the foregoing is the fact that several of these studies deal particularly with the concrete, and are, therefore, related in a very close manner to the observational studies. Among these studies are the sciences, plane and inventional geometry, and manual training.

(6) Several of the studies offer opportunities for the development of the judgment ; they involve not only observation but comparison, and therefore they tend in a peculiar way to exactness in thought and in manual operations. Manual training is one of these studies, geometry is another, algebra another, and drawing another.

(7) The reason under various aspects is trained by mathematics, history, geography, sciences, and language. In some cases the inductive processes are developed and generalizations are made; and in other cases the reasoning is deductive. Algebra, for instance, is peculiarly valuable because it favors the process of generalization.

(8) Imagination is trained in geography, in history, in language, and frequently in the teaching of natural sciences.

(9) Most of the studies are, to a greater or less extent, memory studies ; some of them have been made too much so.

(10) Studies which develop the æsthetic emotion deserve separate consideration. Drawing, music, natural science, and literature deserve consideration here. This may be said to be covered by the studies which develop the imagination. I have made a separate classification because I wish to lay special emphasis on the *æsthetic* imagination.

(11) Training of the moral sentiments, and therefore the training of the will, call in such studies as history, physical culture, and hygiene, the latter because the consideration of the body tends to the consideration of sobriety, self-control, etc.

It ought to be observed that such distinctions as these, or any other distinctions, do not permit of accurate lines of demarcation; for instance, referring to the studies which are intended to be considered on their automatic side, it is perfectly clear that even in developing automatic power we develop at the same time the observing power, and some power of reasoning and imagination. It will be noticed, further, that in considering the various studies each study falls under several classifications.

Answering question 3 specifically, I would introduce every subject named into the elementary course excepting the languages; by and by they may be introduced, but my observation leads me to believe that children have not the power of comparison sufficiently developed to take in the idiomatic construction of other languages. All they get, even if they are successfully taught, is an automatic use, within very narrow limits, of another language, and I do not see any place for this in the school course.

I have answered your questions in this peculiar way because I wish to base the correlation on psychological considerations rather than on any arbitrary grouping of studies.

4. The sequence should be determined by the child's power to apperceive new ideas. As the apperception may lead in several directions, the *logical* development of the subject should be the secondary consideration determining which of these directions should be taken; this is discussed a little more at length in answers to questions 6, 7, and 8. The considerations relating to "the evolutionary steps manifested by the race" belong to the nebulous matter to which I have referred at the beginning of this article. I mean that the subject seems to me to be in its infancy; it is involved with the most difficult sociological questions, and depends for its answer on the answers to questions which sociology only can give. I have failed to find in educational writings anything more than the most general propositions, and much that is written on the subject seems to me to belong to the domain of platitude. If I should answer the second half of the question directly, I should say, yes, certainly, and I would give the preference rather to the human race than to the race to which the child belongs. I do not mean to imply by what I have said that nothing has been discovered by which we may institute a parallel between the evolution of the race and the evolution of the child. Certain broad propositions are sufficiently clear, but when we commence to deal with details I find myself in very great doubt. I do not think that the evolution of

the race furnishes us as yet with definite standards to aid us in arriving at the truth; I would rather trust to the considerations drawn from embryology than from sociology; I think at present they are far more instructive and definite. One thing is sure: the regular teacher will for a long time be little affected by sociological considerations.

5. Postponed. (See after question 8.)

6, 7, and 8. I cannot approach the subject of correlation from the standpoints suggested in questions 6 and 7, and I am not sure that I understand what is meant by correlating the results of work.

It occurs to me that the word "correlation" is frequently used, like the word "co-ordination," to indicate, not correlation, but some method by which we may teach two subjects at once, as when we teach reading and history by reading history. If correlation be thus limited in its signification, I think that the subject is simplified very much, and becomes a series of devices for combining subjects. My conception of correlation takes in not only this, but also the broader idea involved in the literal meaning of the word; *i. e.*, it looks not only to the combination of subjects, but even, where that is not possible, to correlation. Two subjects may be regarded as kindred, and should be taught in conjunction, the one with the other, even when they cannot be actually combined in one lesson.

With this preliminary statement in mind, I refer to my long analysis under the head of questions 2 and 3. I am aware that this analysis involves nothing new; it enables me, however, to answer questions 6 and 7 more in accordance with my own lines of thinking. The central thought is, that the correlation is based on these conditions, physical or psychical, which are to be associated with any given age or state of progress of children. The kindergarten recognizes this theory fully, and the morning talk is the means of correlation. If this suggestion of Froebel's be extended with suitable modifications to cover the whole of the school course, I think we have a starting point in theory, at least, for the construction of a correlated course of study.

To illustrate, take the child at the beginning of his course of instruction, the classification already alluded to. Thus, the question of health is important; such a treatment of physical culture and hygiene, therefore, as is appropriate to that age, must be given, and those two subjects may easily be co-ordinated. The training and co-ordination of the muscles of the body begin at this point, and, indeed, are exceedingly important. Such training and co-ordination as belong to the age of the child having been decided upon, we may thus select from the subjects of penmanship, drawing, manual training, physical culture, etc., the exercises answering the purpose. These subjects should be correlated with the main purpose in view. Considering the fact already noted, that certain studies are valuable as the automatic means by which every attainment is made, as was indicated in the third class of studies above, the peculiar bent which is to be given to the teaching of penmanship, drawing, language, and arithmetic, from this point of view, is evident. In practice the automatic nature of the result to be accomplished is not usually

kept in view. The means employed in the teaching of these studies are illogical. Again, this time of life is peculiarly the time when the observing powers need training ; here is the function of natural science, manual training, music, and drawing, so far as they cultivate the observation.

I have gone far enough to indicate a scheme. Granting that certain physical or psychological objects are proper at a given age or state of progress, these objects furnish the basis of classification under which the correlation is to be made. The arrangement of the programme with this in view is another consideration, to be touched upon later ; I frankly admit that it is a very difficult consideration.

There is another correlation which is evident from the classification I have given, and that is the correlation of purposes. In the foregoing classification I have named ten different purposes. I do not consider this as an exclusive list ; but, assuming it to be the list for the present, it is easy to see, for example, that matters of health and matters of physical co-ordination are easily correlated. It is also easy to see that the training of the observation can be very closely related in certain stages of progress to the training of the imagination, and in other stages of progress to the training of the reason. The teaching of natural science illustrates this proposition. After the earlier years have been passed, the studies in natural science involve such a close connection between the observation and the reason that the line of demarcation is very hard to draw. This is a case in which two purposes of instruction are correlated in one study. The correlation of two different purposes may involve the correlation of two different studies, as when drawing and geometry are correlated, the use of the observation being correlated with questions of exactness involving the judgment, and even matters of reason involved in the geometrical process. I am aware that this will seem very vague ; I offer it merely as a starting point in the investigation of a subject on which, so far, very little that is definite has been added to our knowledge.

5. Yes to (a), (b), (c). A special remark is necessary in connection with (c), if I am to understand the development of character as something larger than the ethical purpose referred to in the second half of (c). I do not see how the individuality of the child can be developed unless we proceed in accordance with the lines I have marked out, or other lines founded on a similar classification. Reading has no meaning in itself ; it does not suggest character development or ethical development, but both are involved in reading. The development of character, however, is a very composite process, involving the development of all the powers of the mind and their physical expressions ; the attention should therefore be concentrated on the particular power or function to be developed, and the correlation should be made with this in view.

Referring for a moment to sentence (b), I think that the apperceiving power of the mind expresses itself through various channels, and the classification of these various departments of action is not based logically on studies, but on function.

9. I do not try to answer the first half excepting to say, what everybody knows, that the recitations in the earlier years of the elementary course should be short. I think that the prominent consideration that determines the length of a recitation is that of interest ; this is especially true in the case of younger children ; and as interest has a direct relation to the vital force of the child, the latter is necessarily involved. In later years a very important consideration is the strength of the will, by which the student compels attention to a subject not very interesting. I believe, however, with Sully, that the limit of this power is very soon reached, and we come back, after all, to the consideration of interest. The adjustment of a programme is very important in view of the fact that the vital force of children declines perceptibly during the day and the arrangement of studies. The programme should take into account the decreasing power of the child to attend, and this fact also regulates the length of time which should be devoted to a given study ; *e. g.*, the period should not be so long in the afternoon as in the morning. Again, those studies which can be more easily made interesting will admit of longer periods than those studies which cannot be made so interesting. And, finally, the ability of the teacher to engage the interest of the class is a very important consideration. A teacher whose power is limited must arrange her programme with shorter periods than a teacher whose power is greater in this respect.

10. To answer this question in full would take more time than I have to give. Will you pardon me if I refer you to my course of study, recently issued, in which the matter is pretty fully discussed ? If you have not a copy, I will try to send you one. The subject is also discussed in the latter part of my last report. In general, I desire to say, that the subjects in 10 should be introduced earlier than they have been introduced. The pedagogical considerations referred to in answer to questions 2 and 3 indicate the basis on which an answer is to be constructed.

11. My thought is that all programmes should be elastic and should vary from day to day ; this need not prevent the teacher from making a formal programme subject to variations. I do not see how, at present, a programme can be made up that is not based on subjects ; but if the elastic nature of the programme is kept in mind, this need not interfere with the carrying out of the propositions referred to in my answer to questions 6, 7, and 8. Each of the studies of the course at a given period of the child's advancement has some prominent characteristic. Thus, in the earlier years the prominent function of the training in science is to develop the observation ; later on it becomes a subject in which generalization is more important than observation. Now, in the earlier years of the course, during the time assigned for natural science, it is entirely feasible to introduce language if the language is understood to be a means of recording the results of the observation, or to introduce drawing with the same purpose in view. Similarly, the language period may be used for the introduction of other studies which are intended to attain the same purpose that is proposed by the teacher

as the principal object of the day's lesson. I do not see that anything would be gained yet by assigning a period to a group of subjects. I think that the development of the subject may some day indicate the propriety of arranging the day's programme on the basis of the purposes of instruction as indicated in questions 2 and 3. The difficulty here is that these purposes are continually running into and overlapping each other ; but this is correlation, and I do not see that it is a serious objection. A programme in which the first half-hour was given to observational studies, and the next half-hour to automatic studies, and the next half-hour to muscular training and co-ordination, and the next half-hour to the cultivation of the imagination, would be a singular programme ; and yet some such plan—not very clear to me, I admit—seems to be the outcome of the reasoning above, and I believe it will yet be found to be the key of the situation.

12. See answer to question 11. I refer you again to my course of study.

13. I refer to my course of study. I do not think that this is a perfect course of study, by any means, but it is somewhat in accordance with the above line of thought, and I would offer it merely as an approximation. I think I could do better if I should try again.

14. No. If the psychological development is followed, there can be no exceptions, and the high school must be made to fit the boy if it is wrong ; the boy should not be made to fit the high school.

15. I refer you to my last report for the year ending August 31, 1893, pages 153 to 186.

16. Already answered under question No. 1.

17. On their ability to take up the work of the next grade, not as ascertained, however, by an examination. The opinion of the teacher should be the important consideration. I am aware that this presents practical difficulties, because there are many teachers whose opinions are not worth considering ; but you must recollect that this objection applies to everything referred to in the whole circular. The method, I think, is the correct one. Teachers must be trained to meet this demand. It will be observed that the course of study proposed in the answers to your circular would enable a child to be promoted much more easily than under former courses of study ; such a course of study would fall under the classification "concentric" or "spiral" courses of study, terms pretty well understood at this time. The fact that a child fails in history ought not to keep him from being promoted, as has been the case in former days. A failure in history may indicate a deficiency of imagination, or it may indicate a deficiency in the reasoning faculty ; and the indication thus afforded ought to be followed, and the deficiency made good if the nature of the child will permit it. This reasoning may sometimes indicate the classification of the child in two classes in different subjects, but should not prevent advancement unless the deficiencies are so general that the child is clearly unable to go on with his companions. This is the basis on which I am working in Trenton, at least.

PAUL H. HANUS, *Assistant Professor of the History and Art of Teaching*, Harvard University.

RAY GREENE HULING, *Head Master of the English High School*, Cambridge, Mass.

SAMUEL T. DUTTON, *Superintendent of Schools*,
Brookline, Mass.

AUGUSTUS H. KELLEY, *Head Master of the Lyman School*,
Boston, Mass.

FRANK A. HILL, *Secretary of the State Board of Education*, Boston, Mass.

CHARLES H. GRANDGENT, *Director of Modern Language Instruction*, Boston, Mass.

1. We call attention, in the first place, to the fact that in many towns, where the school age is five, the length of the combined elementary and secondary courses is not twelve but thirteen years; and, in the second place, to the existence, in some institutions, of a third division, 9-3, not mentioned in the question. The arrangement 8-4 (or 9-4) seems to us the best of all. We like it better than the 9-3 (or 10-3) system, because we regard three years as too short a time for secondary training; and we prefer it to the 6-6 (or 7-6) division, because we fear the latter would encourage an early withdrawal of pupils from school. In any case, we favor the separation of the quick from the slow scholars, and the introduction of a double curriculum that will neither retard the progress of the abler pupils nor unduly hurry the duller ones. We believe, moreover, that courses must be so arranged and methods so shaped that the transition from the elementary to the secondary grade shall be scarcely perceptible.

2. Each subject has, in the later elementary period—*i. e.*, after the work has properly diverged into separate but more or less closely correlated subjects—a distinct pedagogical value. What it is in each case has never been demonstrated. In general, it may be said that each subject has a peculiar value for each pupil in at least two respects: (1) for the development of *incentives—mental, moral, æsthetic, constructive*, through *interest*; and (2) for the development of *power (to think and to execute)* and of *desirable habits of expression and conduct*. For these purposes the several subjects should be regarded by the teacher as *instruments through which the pupil is to be discovered*. It is only on the basis of such a discovery that the pupil's development of incentives, power, and habits can be intelligently stimulated and guided.

With this general view of educational values in mind, the following details are suggested:

Language and literature are valuable as instruments of acquisition and expression, and literature is especially valuable for its influence on aims and character. Reading, spelling, and "language" are helpful in all stages of elementary education; grammar only in the latest stages.

Mathematics introduces order into man's conception of the world, through number and form, and is further valuable as a means of forming habits of accurate perception of and deductive reasoning on mathematical data. The range of such habits, however, is narrow, and they are not, to any considerable degree, transferable to other conceptions. Arithmetic is, besides its value for commercial purposes, also valuable, like both algebra and geometry, as an aid in the prosecution of other subjects. Concrete geometry has a special value in developing right concepts of the form and measurement of material objects, and demonstrative geometry a similar value in forming habits of deductive reasoning. Inasmuch as the ability to reason is late of development in most children, this form of geometry should be sparingly used in elementary schools.

Geography is useful in leading the pupil to observe, compare, generalize (in a degree), and record facts relating to the earth's surface and its inhabitants. It is adapted to use with children in all but the lowest stages of elementary education, and has, like arithmetic, considerable commercial value. It is an important means of correlating nature study and literature and history study.

History supplies information concerning man's experiences and achievements; and by continually exercising the pupil's mind, at first unconsciously, but finally consciously, in repeated acts of judging and reasoning in regard to the motives and the acts of nations and of individuals, it may be used as a means of developing high aims and habits of judicious thinking about men and affairs.

The value of natural science lies in the readiness with which it lends itself to the formation of habits of accurate observation, accurate recording, and inductive reasoning. The first of these, observation, is the aim to be chiefly sought by this means in elementary schools. Each of the three branches named, botany, zoölogy, and mineralogy, have also some information value, but that value depends somewhat upon the subsequent career of the child.

Penmanship is valuable as a means of communication with others (and doubtless also as an aid to precise thinking).

Drawing gives the mind, through the eye, correct habits of perceiving form and proportion, and through the hand correct habits of expressing these qualities. (Some color training is also wise.) It also creates in many the beginnings of an appreciation of art, and so adds another to the refined pleasures of life.

3. Other subjects than those mentioned above should be taught in the elementary-school course.

Elementary instruction in art should accompany the work in history and literature. For this purpose busts and casts should be available, that the pupils may learn to know and to appreciate these achievements of men, as well as the directly "useful" products of human effort.

Manual training (including sloyd, sewing, and cooking) should be taught in these schools, for its value, (1) as supplying useful information, (2) as a means of developing habits of construction (one form of expression), and (3) as a test of the pupil's aptitude, and so as a guide to his future studies and occupations. (Some

pupils respond to this stimulus who have previously been unresponsive.)

Physical culture, with the element of play made prominent, should be taught in order to counteract the injurious tendency of indoor confinement and other ordinary school conditions, and in order to promote systematically the child's normal physical development.

Physiology (including the effects of stimulants and narcotics) should also be taught, in order that, through accurate knowledge, a motive may be supplied for the continuance of right physical habits. The instruction in physiology and that in physical culture should be duly co-ordinated.

Physics should be taught as a means of inducing good habits of observing and manipulating material objects, and of measuring material forces, and also for its value as a test of aptitudes.

Music should be taught as another means of expression, and for the addition it brings to the pleasures of life.

A second language (in addition to English) should be taught in the elementary-school course, in order that a pupil may early begin the acquisition of two literatures instead of merely one ; that he may compare at least two methods of expression of thought ; to insure the consequent broadening of his mental horizon ; and that he may enrich his vocabulary, quicken his literary observation, and strengthen his power of literary analysis. The second language should be modern rather than ancient, because in structure, in order of words, and in vocabulary, modern languages resemble our own more nearly, and so present less difficulty to an elementary pupil.

4. We understand that the phrase "the sequence of topics" is used by the committee to mean the sequence of different studies as well as the sequence of the subdivisions of a single subject. We interpret the phrase "the child's power to apperceive new ideas" to mean the child's power to assimilate new knowledge with the help of his past acquisitions (both of knowledge and power). We assume that the committee employ the phrase "logical development of the subject" to mean only a deductive or synthetic exposition of the subject, and that the committee believe there is always a necessary conflict between such a development of the subject and the child's power to assimilate the knowledge so presented ; otherwise we fail to understand the alternative in the first part of question 4.

We believe that the process by which a child assimilates new ideas may be either an inductive or a deductive process ; but that acquisition by inductive processes is the chief mode of normal acquisition in young children, and that acquisition by deductive processes, though beginning at an early age, is normally of gradual development. While, therefore, the child's power to apperceive new ideas is employed both in deductive and inductive acquisition, his normal mode of acquisition is mainly an inductive process ; and hence the sequence of topics within a given subject should be chiefly adapted to those processes. As regards the sequence of different subjects, we believe that for the first two or three years of school life the only sequence of subjects aimed at should be the

sequence involved in an orderly presentation of the whole field of knowledge. After the first two or three years, however—that is, after the subject-matter of instruction begins to diverge definitely into several distinct studies—the child's power to apperceive new ideas will often make it possible and desirable to present a subject in accordance with its logical development. This is possible, because, through proper instruction—that is, through adequate and telling illustrations and through the correlation of different topics in the same subject and of one subject with other subjects—knowledge may be assimilated by a deductive process without rote learning or diminution of interest or self-activity on the pupil's part; and desirable, because the child should, with increasing maturity, receive training in the acquisition of subjects through their logical development, and also because there is often a considerable saving of time in such development of a subject over what would be needed for a purely inductive development. Both inductive and deductive modes of developing subjects, therefore, seem to us desirable. The relative use to be made of each of these processes in every lesson, or in successive years, must be determined by the needs of the children and the tact and judgment of the teachers.

Second part of 4. "The evolutionary steps manifested by the race" seems to us too vague a phrase to be more than generally suggestive in a matter involving such specific details as the sequence of subjects or topics. The phrase, of course, suggests that, in many respects, ancient races were childlike, and that from the interests of these races we may learn something of the interest of modern children; and that, in a general way, these interests may be made serviceable in the choice of topics for the instruction and entertainment of modern children. But to assert that the sequence of topics employed for the education of modern children should be determined by the evolutionary steps manifested by the race is to assume a knowledge of such a close parallel between these steps and the mental and moral development of children as we do not possess. To attempt an arrangement of topics with such a vague determining principle we believe to be impossible without much forcing.

5. We answer yes in reply to (a) and (b). In place of (c) we prefer the following statement:

To establish as many natural associations as possible between the pupil's acquisitions, so that the habit of forming associations may be developed. This is only another way of saying that close correlation may help the pupil to form the habit of seeking and holding relations between all his experiences. The significance of all acquisitions lies in their relations. This habit tends, therefore, to make a pupil not merely a learner, but ready in investigation and application; and especially during the later years of the grammar-school period and all of the high-school period this habit tends to help in developing dominant groups of ideas. These dominant groups of ideas involve the growth of permanent interests and incentives which may lead the pupil to mental and moral stability. Moreover, such dominant groups of ideas often enable him to decide intelligently upon the probable forms of activity to which he is best adapted.

This statement is intended to indicate the way in which correlation tends to develop character.

6. In the first two or three years of school life all subjects should be pursued in close correlation. In the later years of the course every subject should be correlated to all others so far as they are naturally related. Certain subjects have natural relations throughout the entire course, and may be grouped for correlation throughout.

7. There are certainly two great groups ; viz., nature studies and history and literature studies. Geography is a connecting link between these two groups, and, to a certain extent, binds them together.

8. This question has been partially answered under 6. Correlation of the results of work in all the groups we regard as neither satisfactorily possible nor desirable. Complete correlation in a fair sense, that is, in the sense of binding all subjects together through the medium of some selected central subject, belongs to the earliest grades. Specialization limits correlation. Less stress will be placed on lateral relations in proportion as greater stress is placed upon the relations that are consecutive. The best correlation is that which thinks more of the interest aroused and the resultant moral tone than of the union of subjects. True co-ordination is more subjective than objective. It is *quality* of mental effort rather than *quantity*.

9. Recitation periods should be very short ; a few minutes only in the lowest classes. They may be increased as the children grow older. Thirty minutes ought not, in general, to be exceeded in the upper grades of a grammar school, although some subjects may receive forty-five minutes or even an hour.

10. They should all (algebra and geometry excepted, unless by geometry, for instance, is meant the recognition, drawing, and mensuration of simple shapes) be begun in the lowest class and continued through the course. Naturally, the simpler facts of the sciences are meant, and nothing like formal study of botany, grammar, etc., in the younger classes. (See report of Committee of Ten, except that biography and mythology should be introduced earlier.)

11. Before an answer can be given to No. 11, such questions as these need to be considered :

Ought not a little uncorrelated work (or work whose correlations are between principles last studied and those coming next in the logical development of the subject) to be done each day before any lateral excursions are made? For instance, ought not there to be specific number, drawing, color, and word lessons, with only association enough to develop them intelligently, before correlation in the larger sense is attempted with the products of such lessons? This seems to us a necessity. If so, there should be set times for such comparatively isolated lines of work and set times for the group work.

12 and 13. The subjects of an elementary course belong to all the years of it, as described above. The only question, then, is the

division of the hours of the day or of the week. This is a matter that can only be determined by intelligent and somewhat extended experimentation. The changing of centers for correlation from time to time is involved.

The work of the elementary schools may, in accordance with what has already been said, be grouped under the following general heads :

- (1) Language and literature.
- (2) Science, biological and physical.
- (3) Mathematics—geometry, arithmetic, and algebra.
- (4) History.
- (5) Art—music, drawing, modelling, painting, manual training.
- (6) Physical exercises and play.

Play is included with physical exercises, as special attention should be given to determining the kinds of play best suited to physical and moral development. Most of the time given to recesses, as at present conducted, is, to say the least, wasted.

Play should and can be made as useful in the physical and moral training as gymnastics, and at the same time be freed from the artificial restraints that tend to diminish spontaneity.

For purposes of experimentation, the following time divisions are suggested, on a basis of twenty-five hours a week :

FIRST AND SECOND YEARS IN SCHOOL.

- (1) Language, ten hours per week, including one hour for music. Here music counts as language, but no less as art.
- (2) Mathematics, four hours per week. Details omitted.
- (3) Science, three and a half hours per week. Details omitted.
- (4) Form, three hours per week. This part of art work includes drawing and modeling, correlated with 2.
- (5) Physical exercises and play, four and a half hours per week.

YEARS, THREE TO EIGHT INCLUSIVE.

(6) Language, eight hours : English, seven hours for first three years, three hours for last three years. Foreign, four hours for last three years of the course. Music, one hour per week.

(7) Science, six hours per week : Biology (botany, zoölogy, simple physiology and hygiene), physics, geography, and chemistry.

(8) History, two hours per week for six years.

(9) Mathematics, four hours : Arithmetic, first four years, three hours per week. Geometry, beginning with the seventh year, one year two hours per week, and one year one hour per week ; correlated with arithmetic, drawing, nature study, and manual training. Algebra, beginning with the seventh year, one year one hour per week, and one year two hours per week ; close correlation with arithmetic.

(10) Art—manual training and drawing, two hours a week for six years.

(11) Physical exercises and play, two hours a week for six years.

14. No.

15. Yes. To answer this question in full would require model lessons covering all phases of school work throughout the entire course.

16. In our opinion, the introduction of specialization should be determined by the following considerations :

(1) By the grade of the class. In the first years of school, the instruction consists of a general introduction to the field of knowledge, and the different subjects are naturally brought by the teacher into close relation with one another. Not until the fourth or fifth year of the pupil's school life do the various branches of study diverge into distinct channels. Specialization should not be attempted before this time.

(2) By the nature of the studies. Some branches, such as English, history, and geography, can easily be connected, and can be well taught by any intelligent and capable person of good general education. Others, such as chemistry, physics, and foreign languages, require, if the best results are to be obtained, the services of a specialist. When the latter subjects are introduced, specialization should begin.

(3) By the character of the school. If discipline is hard to maintain, or if the teachers have not been thoroughly trained in any particular branches (and are not willing and competent to acquire such training), the conditions are unfavorable to specialization.

17. The promotion of pupils should depend on their fitness to pursue the studies of the higher grade ; it should not be influenced by their age, the clamor of their parents, nor the insufficient accommodations of schoolhouses. The scholars' proficiency should, as a rule, be determined by their daily work rather than by special examinations. The question of promotion and graduation should never be left to school boards elected by popular suffrage ; the general principles should be established by the superintendent, and the individual cases should be decided by the principal in consultation with his teachers.

R. H. JESSE, *President of the University of the State of Missouri*, Columbia, Mo.

On the FIRST question my own views are most pronounced. I think the elementary course should be six years, and the secondary course four, making a total of ten years. We are now taking twelve years to do what can be done in ten. The dullest may get through in twelve years, the brightest may get through in nine. But I think that students of average ability and fair industry, with better teaching, and especially with better programmes, can do in ten years what they now are doing in twelve. My own experience is based upon New Orleans and rural Missouri, that is to say, all of Missouri that does not reside in cities of ten thousand and more. My experience, based as I have said, is that two years are lost in the eight-years' district-school course. The children take eight years to do what might be done in six.

As to the THIRD question, I do not think that Latin or a modern language should be taught in the elementary-school course, if it be reduced to six years. If the course is to stay eight years long, I am in favor of enriching the last two years to such an extent as to make them practically high-school work.

But I am sure you would not have sent me the paper if you had thought it was to draw from me in this hot weather a long disquisition. I will stop, but first I must make in the briefest style three remarks.

First, Ethical culture should, in my opinion, receive more emphasis than it now does in elementary schools.

Second, Too much is included in the four-years' course of colleges—I mean our best colleges. The bachelors' degrees should mean rather less than they now do. There should be more graduate work, and it should begin a little earlier.

If I had my time to go over again, I would vote to put more science in the classical course proposed by the Committee of Ten—in fact, I would put science in every year. To get the necessary time, I would omit something—painful as it would be to do so—included in the present course.

I am delighted to see these seventeen questions proposed to the Committee of Fifteen, and I trust that the committee may be guided into all wisdom. The reformation of the elementary schools is even more important, in my opinion, than that of the secondary schools.

L. H. JONES, *Superintendent of Schools*, Cleveland, O.

WHAT CORRELATION OF STUDIES MEANS.

It implies such use of studies together as to secure an advantage not to be had from separate consecutive study of the same subjects.

What are some of the advantages that may thus be obtained?

(1) An unrelated fact cannot exist. To know it as its qualities alone, without knowing its relations, if this were possible, would be to know very little indeed about it. Its most immediately important attributes are often those of relation. After the fact has been known in its essential qualities, the next study is its most important relations; *i. e.*, those which it sustains by virtue of its qualities, or those humanistic relations it bears.

Now, it is impossible, frequently, to find the appropriate fact with which to relate the one just learned, in its own field, and there will never be another time when the tendency of this fact to relate itself properly and permanently to this germane fact will be so strong in the mind of the learner; hence the necessity of going outside the prescribed limits of a particular subject, and correlating the two subjects, in order to establish this important and necessary relationship at the most favorable moment. Some other time will not do so well.

The teacher can in a large measure foresee this kindred and appropriate relationship; therefore it is possible to *prepare* to cor-

relate subjects. Indeed, some subjects by their very nature suggest correlation.

For instance, literature treats of a class of ideas that are internal, difficult to define or describe, but easy to recognize in experience when the proper suggestions are made. A poetical study of nature—*i. e.*, a study of nature as related to human life—assists in suggesting these spiritual ideas, hopes, ideals, etc.; hence the poetical view of nature is the natural correlate of literature.

In the same way the scientific study of nature will be found to be the natural correlate of the study of individual life.

There are numerous other lines of correlation in which effectiveness in instruction is secured through correlation of studies.

(2) Since the ideas are seen more quickly and intensely by the relations of likeness and contrast made possible through this correlation, the memory is made more permanent with less repetition.

(3) The habit of searching for valuable relations is established, broader sympathies in study are developed, and the power of rational apperception is greatly increased.

(4) Non-essentials are effectively eliminated.

(5) There is a generally liberalizing effect on character—an impression of general unity of things, even under diverse appearances, that is of great value.

(6) It develops manliness, tolerance, respect for candid opinion, and a contempt for pretense, depending on what ideas he now possesses which he can bring to bear on the new study.

1. The elementary course of study should be eight and the secondary four, as now.

2. This depends upon what is meant by pedagogical value. Each subject (or at least each group of subjects) has by its nature the capability of producing, through its mastery, a distinctive educational effect in the learner.

The following analysis will make this clear: The effect of learning a thing or of taking a course of training, so far as the mind's condition is changed by such learning or training, is manifested in some of the following respects:

(1) The spiritual development resulting from spiritual sustenance or nutrition, such as is given by social, moral, æsthetic, humanitarian, or religious ideas.

(2) The spiritual development resulting from exercise of the spiritual powers in accordance with laws of spiritual life and growth.

(3) A changed condition with reference to the possession of elementary ideas which may later be used by the mind for combination into more valuable or usable ideas.

(4) A changed condition so that one has more tools in the form of ideas that may act afterward as interpreting ideas (or apperceiving ideas).

(5) A new set of ideals—ideals of life, conduct, achievement, etc.

(6) A new condition as to habits—intellectual, emotional, and practical (or volitional).

Now, it is clear that these subjects, or groups of subjects, differ in their adaptations to produce these effects, some possessing a

higher adaptation to produce one or more of these effects, and others possessing a special adaptation to produce still different ones.

To illustrate, penmanship gives a new tool—a conventional means of communication between human beings, rather than ideas that are spiritually nutritious; while literature, properly mastered, gives ideas and truths so touched with human emotions, and so related to human interests, as to be of real value as nutrition for a human spirit, and to be of real use in the formation of ideals of living, so necessary in the right education of the young.

So history studies the deeds of men in such way as to illumine life and living; while spelling merely makes communication possible in a certain way.

All these subjects may in a way be necessary, but they serve distinctly different pedagogical ends. It would take a very close analysis to distinguish all these differences; and even then the whole truth would not manifest itself, because these subjects are so interrelated that the best effects of two widely differing groups require perfection in the learning of both groups.

Certain slight correlations should be effected among all the studies, much closer ones by groups, and most close between certain allied subjects in the same group.

3. Many subjects enumerated in No. 3 should be taught in the elementary schools. At least one language other than the mother tongue seems desirable for strong pupils.

X 4. There should be so much attention to logical sequence of topics as the child is able to bear with his particular stage of apperceiving power.

But this should always be controlled by this same power to apperceive. This power to appreciate is composed of two elements: (1) subjective condition of child, by reason of his development—strength, etc.; (2) objective condition, as to the ideas which he possesses, which may become apperceiving ideas for the subjects to be studied.

(1) is somewhat involved, more or less, with the stage of development of the children, and somewhat in the law which controls race development; but (2) is dependent chiefly upon what have been the studies pursued, etc.

Y 5. All are more or less involved. A fuller answer to this is found in introduction above.

X 6. It is better to correlate by groups.

14. There should be no difference of treatment not authorized by difference of capability or apperceiving power in pupils.

16. The points of specialization of work by teachers should be mainly determined by the point of development of character in the pupils to that degree in which they no longer require the complete, consistent, concrete example of conduct furnished by the one teacher, but can take advantage of the fragmentary suggestions of character and conduct furnished by many teachers in their study and continuous contact, and should be determined only slightly by stages in logical development of subjects.

17. The leading principle on which promotion of pupils from

grade to grade should be made is the ability of the pupils to do the work of the next grade more advantageously than to continue repeating the work of the grade just completed or which is just being done.

This determination should be by the superintendent, who should use all the knowledge the teacher in charge possesses, and supplement this by some appropriate additional test.

L. R. KLEMM, *Bureau of Education*, Washington, D. C.

1. A bifurcation might take place in the elementary course after the sixth year, so as to afford all who intend to enter a secondary school opportunities for beginning the study of foreign languages and mathematics. The other pupils, and probably the majority, could continue their elementary course until it is completed as heretofore. This plan recommends itself for two reasons: (1) It does not hold back talented pupils, and (2) it improves secondary education.

2. Yes, but a detailed answer would lead to the writing of an essay, which would be entirely *de trop* in view of the fact that Dr. Harris has discussed the value of these studies in several papers before the National Educational Association. I only add here, that the first group would be immensely benefited by the introduction of a foreign language, for the mother tongue is never learned well unless opportunity for comparison with another language is offered.

3. Yes, all these subjects might be profitably taught if restricted to the elements or rudiments. Physical culture is acquired by exercise, and a great deal more should be done in this direction, both for the purpose of maintaining and promoting health and gracefulness of movement. Physics and physiology, as well as Latin (or a modern language), should be branches assigned to the seventh and eighth years, and taught only to those who intend to enter the secondary school. This is, however, not to be interpreted as meaning that no allusion to physical phenomena, physiological functions, or references to philological comparison in the study of the mother tongue, should be excluded from the regular eight-years' elementary course.

4. That the sequence of topics should be *naturgemäss*, as well as *culturgemäss*, is an axiom which needs no demonstration; but with reference to the evolutionary steps manifested by the race, I should say that the *child's* race, or nation, is of supreme importance. The term "human race" is too comprehensive (embracing as it does the savages) to consider it.

5. All three purposes are equally important.

6. If the studies of each group mentioned under 2 are properly correlated, the further correlation of the groups to each other will result naturally. Mere allusions, made as chance offers, will suffice. It is at this stage, as it is with the student at a university, he will instinctively feel, and soon consciously know, the near or remote relationship of all knowledge.

7. Relation might be established in a practical way by borrowing

material from one study to aid another, as, for instance, arithmetic from geography, history, and drawing, by reckoning with actual facts, and not with abstract numbers only (or with situations in which the price of a cow is found to be sixty cents, and that of a beef-steak sixty-nine dollars). The same relation may be established between arithmetic and geometry through the medium of mensuration, or between natural history and physiology, or between history and language. Any class teacher who is well versed in the subjects he teaches will establish relations, where the specialist who teaches only one or two branches can see none.

8. As stated before, this correlation need not necessarily be planned, it will naturally result from the teacher's tact and forethought.

9. That depends upon the climate, location, and local circumstances. Ordinarily five or six recitation periods at forty to forty-five minutes per day, five times a week for forty weeks a year, seems ample. In the primary grades the periods may be shorter, say thirty minutes each.

10. In a rudimentary way every branch of study should be treated at once at the beginning of the course; as, for instance, the child who learns that eating unripe fruit is dangerous to the health, or that the heart beats and pumps blood, is learning physiology. A child who gets acquainted with the fact that heat rises, and that it is warmer near the ceiling than near the floor, studies physics. But the regular study should begin in

Language (reading, spelling)...	1st year	Penmanship.....	2d year
Language (grammar and composition).....	6th year and 4th "	Manual training.....	4th "
Arithmetic.....	1st "	Physical exercises.....	1st "
Geometry.....	7th "	Physics.....	7th "
Algebra.....	8th "	Physiology.....	8th "
Geography.....	3d "	Music (singing).....	1st "
History.....	7th "	Latin (or modern languages)...	7th "
Natural history.....	4th "	Drawing.....	3d "

11. It is preferable to make the programmes for groups and not for single studies; this enables the teacher to make changes without disturbing the course. An elastic programme is needed.

12. The language group should have one period a day, mathematics four times a week, geography and history four times a week, natural history and science twice a week; penmanship, drawing, and music, as well as manual training, should share the fourth period of each day. This leaves the fifth period for physical exercises, and special lessons for the new studies of the seventh and eighth grades.

13. An answer to this would necessitate much detail work; much depends upon local conditions, especially upon the preparation of the teacher.

14. Only for the pupils of the seventh and eighth grades who intend to enter the secondary school should the methods applied and the matter to be learned be different from the simple elementary course.

15. Not very well. A good teacher would not need it, and a bad teacher would not profit by it.

16. I should be guided by experience, which tells me that the bifurcation may take place profitably after the sixth year of the elementary course.

17. The teachers and the principal of the school have always appeared to me to be the proper persons to grade the pupils. But it is advisable to have the promotion determined by

(1) The teacher who *has* the pupils.

(2) The teacher who *is to get* them.

(3) The principal as the presiding judge.

In cases of disagreement, the assistant superintendent is to decide. An appeal from his decision to the superintendent is admissible.

F. M. McMURRY, *Principal of the Franklin School,*

Buffalo, N. Y.

In regard to (a) under question 5, I should like to make a few points as follows :

(1) A close correlation of studies will furnish a *motive* in pupils' minds for taking up new topics. A *real motive*, instead of the ordinary state of *indifference*, gives assurance of greater mental activity, better apperception, etc.

(2) It will save much time by making long explanations unnecessary ; as, for instance, when the reading introduces " Paul Revere's Ride," after the history has handled the battle of Lexington.

(3) By ruling out irrelevant ideas it leads to the omission of non-essentials, for the irrelevant notions are the non-essentials ; for example, brokerage, cube root, first three French and Indian wars, etc.

(4) It furnishes abundant opportunity for *incidental* reviews, which are by far the best kind of reviews. Ordinarily the mind is at no tension during reviews, the *memory*, and not the *judgment*, being appealed to. But proper correlation furnishes occasions continually for making *use* of what has already been learned, thus giving a *motive to the child* for reviews. Also, the old points are usually reviewed from a somewhat new standpoint when recalled by other studies ; thus not only the interest, but also the *thoroughness of the knowledge*, is increased.

ALMON G. MERWIN, *Principal of Grammar School No. 74,*

Brooklyn, N. Y.

1. If the purpose of elementary schools is to do the most that can be done for the pupil who does not go to college—that is, for the vast majority—I think it better to make the course, as it is now, eight years and four years ; otherwise the pupil will leave the elementary school at the end of six years, and not enter the high school at all.

2. The study of language as a means of expression better prepares a pupil to influence others ; the study of language for its

content gives ability in knowing the thought of other minds ; the study of language for itself, its origin, its mechanics, has little value, unless combined with its study for thought and expression. When language is studied for the thought, it cultivates the judgment, because it is never exact—except mathematical language—always approximate. The very words, “large,” “small ;” “near,” “far ;” “many,” “few ;” “good,” “bad”—tell us this. In consequence of this uncertainty the mind is obliged to judge upon probabilities. Judging upon probabilities is what we are doing nearly all of the time in practical life. This study of the content of language I believe to be of the very highest practical and pedagogical value.

No one doubts the value of language as a means of expression. Concise and clear expression reacts upon the speaker's mind, or rather, perhaps, the effort at clear expression brings the thought into stronger relief in order to clear mental vision, which alone makes clear expression possible. Great fluency does, indeed, frequently exist with very little thought ; language becomes the rattle of lumbering emptiness, not the hum of conscious thought.

Mathematics is that form of language which deals with measured or measurable existences. Verbal language approximates only ; mathematical language is exact or more nearly exact. If mathematics has any special value, it lies in this, that it trains the mind to exactness, and further, that it gives the mind the power to abstract and compare relations, or elements, common to many different things. Its duty is to measure relations. In verbal language we say, A is heavier than B ; in mathematical language we say, If A is 1 in weight, B is 3 in the same attribute.

That language is indispensable to thought, speaking generally, we must believe ; yet much of the best thinking is done without language. The inventor thinks in terms of the parts of his imaginary machine, and it requires an expert to put the machine into verbal language.

This brings out a pedagogical value as well, I suspect, as a chief practical value of language. It is a record by which a thought once in the mind is caught and recorded or labeled for further observation when the mind has leisure. I am of the opinion that but for the discovery or invention of language the human race could never have emerged from bruteness.

Geography answers that natural or inherited demand of the mind, Where ? Its special value—pedagogical value—is that it cultivates the imagination. We know from observation but little of the world. We see a little, and by use of the imagination construct the rest.

History leans somewhat upon geography ; indeed, history has been made possible by geographical conditions. It exhibits men in the trend of events ; it forces upon the mind important generalizations, and habituates it to the recognition of law in all human affairs. Under right mental conditions it leads to the highest generalizations. Too often in elementary schools it is a mere patchwork of events.

Natural sciences, as studied in elementary schools, do very little pedagogically for the mind.

These studies may or may not cultivate habits of observation. Science involves generalizations that belong to a stage of development later than the primary schools. Minute and prolonged observation, unless accompanied by high powers of generalization, tends to narrow the mind. Wide generalizations are usually suggested by a few facts; a theory is formed, then comes verification of the theory by a multitude of observations. This is the work of well-developed minds. The facts of natural science, like other facts, are of more or less value to children. I apprehend that their pedagogical value to children does not differ widely from the value of many other facts common to every-day life.

Drawing creates habits of close attention and care. Its general pedagogical effect upon the mind is good. Its value in enabling children to see things as they are is, I think, much overestimated. Drawing is the representation of appearances, not of things as they are. It is the work of time to make a child ignore the real form and draw the appearance as projected on a plane surface. I can conceive that in many cases drawing may retard, rather than aid, real investigation. We record things by drawing, not discover them. As a record and as a form of language, drawing is of the very highest utility. In accuracy of expression, drawing is also superior to verbal language.

3. With one or two exceptions, in a six-year course, I say emphatically *no*. In an eight-year course no language but English, but English more thoroughly.

Educators seem to deny, by their acts, that the school is for a special purpose. They assume that, whatever the child is to be, he is to be made in school. They ignore the Church, the home, and that all-important education that comes from the child's association among his fellows, and his experience in the outside world. I believe it most fortunate for humanity that there are phases of education that the schools cannot control.

I might say, too, that the school tends to prevent a spontaneous activity. This is a necessity. The school is directed activity. Yet we are not to forget that, as nearly as possible, we are to secure directed spontaneity. At best, this can be but imperfectly done. There are the studies blocked out, and there is the time. Each one of fifty in a class must get practically the same quantity, the same quality, and in the same time. A future examination demands a memoriter drill, which leaves little time for mental activity in other directions. This memoriter drill tends to repress spontaneity. Incidents may, to some small degree, excite spontaneous activity. Besides, it is the very nature and purpose of a school to direct activity. The problem is to direct spontaneous activity. This problem has not yet been solved. Incidental instruction or learning cannot take the place of specific instruction. If it could, schools would be unnecessary.

Therefore, among all the things it is well for a child to know, we must select a few, the most important. To place too much in a course of study is like trying to train the muscles of a ten-year-old boy to lift as much as a man—just as stupid, just as impossible.

4. Undoubtedly by the child's power to apperceive new ideas, which, I take it, means his power to understand things. The child must be approached on the side of his experience. One child knows mountains and plains; another, rivers and lakes; a third, cities and towns.

No child in school can receive the new unless there is in his mind a structure of knowledge to which he can attach it—into which he can build his new ideas, a category under which the new will fall. This structure, or this category, is more or less modified by the new, while the new is labeled as this or that by the structure into which it is built, or the category under which it falls. It is probable that every mind sees a new subject from a standpoint a little different from that of every other mind. This comes from the fact that no two minds have just the same experience. It also suggests the inherent difficulty to be met in our schools. We are obliged to start a thousand children in just the same way, regardless of their differing experiences.

I should not consider for one moment "the evolutionary steps manifested by the race"—by any race.

Man may have existed a million years, more or less. What we know of the race, at the most, is the history of a few thousand years—too short a period to determine man's character during the process of evolution. In truth, what we really know of the evolution of prehistoric man is practically zero. What some pretend to know is really a result of reasoning backward, assuming as a premise the very point to be proved, and this is the way it is done: The child is developed thus before our eyes, therefore the race must have been developed thus a hundred thousand years ago. It is assumed that the individual development is a type of race development; then we reason backward to determine how the race was developed—a very unsatisfactory way of reasoning. But, even admitting the assumption, the whole matter is too vague and too involved to make such possible process of evolution a practical guide. If the every-day observation of the processes of education, and the study of the child every day with us, do not help us to a knowledge of educational principles, I think it will be quite in vain to seek those principles in the study of prehistoric man. It is true, we know there were cave-dwellers somewhere in the past, who with clubs fought wild beasts, broke their bones, and sucked out the marrow; we also know there are now savages that take scalps, hunt heads, roast and eat their enemies, and live in caves or under bent trees. If we are to follow the development of the race, these conditions are very suggestive. I am fully of the opinion that we had better study for the principles of education among things around us, instead of trying to find them in the Trenton gravels, or among the cave-dwellers, or lake-dwellers of southern Europe.

As to the studies that should be taught in school, I am unalterably fixed in the opinion that those studies should be placed before the child that will be of most value to him in a later probable environment. Such studies will give him the best discipline, for they will habituate him, physically, mentally, and morally, to that line of

activity which meets the demands, the necessities, of his coming life.

5. I should in a measure say no to (a), (b), and (c). There must be some duplication, just as there must be duplication in splicing a rope. Indeed, apperception is little else than a splicing, a correlation, an interaction, a unifying of the old and the new. I think the point is deeper than correlation, it is really a question of the unification of knowledge. It is finding some common characteristics of knowledge, so that all knowing may be made one. Correlation is the process toward unification, a process seldom adopted by developed minds, probably the highest process of which the intellect is capable. By this correlation and perception of common properties or factors have been made all, or nearly all, the discoveries that have created science and extended the bounds of knowledge. But it is a late process, and should be used with great care in elementary schools. I do not see how correlation will eliminate non-essentials.

11. Time should be assigned for each subject, this beyond any shadow of doubt. The contrary opinion has been in part responsible for overloading our courses of study for elementary schools. It has seemed to be assumed that by using the term "mathematics" to include arithmetic, algebra, and geometry, the study of these subjects has been simplified—a most fallacious assumption. I wish to express the opinion with more force than I can express it, that every subject and every material point in every subject taught must at some time be made a specialty in elementary schools. No correlation can take the place of special work. It appears to me a mad fallacy that the implements of learning, reading, penmanship, drawing, in short, *expression*, are mere incident, to be learned incidentally in the study of nature. I concede that, having gained a fair knowledge of the implements, there comes a large increase of skill in their use. Must a man never learn to load a gun until he sees the game? or shall he never study an engine until he is to drive an express train?

Besides, the implements of knowledge are as real, as much subjects of thought, as nature itself; indeed, in any wide view the implements of knowledge are a part of nature, as man is a part of nature. Words, numbers, pictures, actions, are as real things as trees, flowers, or rocks; and as such they are subjects of special study. To my mind, the very purpose, end, and aim of the school is to do special work in preparation of the individual for probable conditions he is to meet in future life; hence education in school, especially in an elementary school, must deal largely with the tools of knowledge, as well as with the knowledge to gain which these tools are used. Therefore, I conclude, there is no gain in calling geography, botany, zoölogy, mineralogy, physics, and physiology "nature studies" or "elementary science," or in correlating them as such; the mind will not be so cheated into knowledge. I must believe that mere theorists, men who have never tried their own theories, who have quite false views of the purpose of a school, are the men who have instigated this most mischievous folly.

13. This means the basis of a course of study. Whatever we may determine will be a matter of opinion, and will be changed with changing conditions. The probability is that no one really knows what are the topics that it would be best to introduce into our schools. I may say, give time to do well what is undertaken. Take those topics that will be of use to the pupil in later life. Never study anything for its disciplinary effects only. Discipline, like character, is lost by seeking. Study thoroughly what will be most useful, and that study will inevitably give the best discipline.

14. I think it wise to make some difference, especially in the studies of those who expect to take a course in college or in some technical school. Some of the more intricate facts of elementary studies may be omitted. These problems of the elementary school will be mastered with little time and effort in the high school. With such pupils a saving of time might be made by waiting until the mind has grown. With many subjects special effort must be made, for practical reasons, to impress upon the minds of children who leave school early what they would easily grasp if we could wait for them.

17. I know no other principle than that the work of the grade shall be fairly completed. There may be some exceptions to a rule based upon this principle. It may happen from some peculiarity that the child fails in one study; in this case he should not be detained, but sent forward to get what he can. It sometimes happens that a promotion will awaken in a lazy or discouraged child renewed activity; then promotion should be tried. Sometimes promotion acts like a change of diet, creating a new appetite for work or knowledge; then try it. Capable children should have the opportunity of doing their work in less time and be promoted accordingly.

In clear cases, which should include sixty or seventy per cent. of the class, the teacher should make the determination. Where there is doubt, an oral or written examination by the principal, together with the judgment of the teacher, should determine.

WILLIAM A. MOWRY, Hyde Park, Mass.

1. This question involves some very important considerations, and should be answered with care. It is well known that but a small percentage of the pupils who finish the grammar-school (or elementary) course of study go on to the high-school (or secondary) course. If the elementary course nominally ended two years earlier, it is apparently certain that a large number of those who now manage to complete the eight or nine years' course would end their school-days with the completion of the elementary course at the end of the six years, thereby losing two valuable years of important school work. Such a result would prove inevitably a serious loss to the country.

But it is claimed that much valuable time may be gained by beginning the high school (or secondary) work earlier. There are two sides to this question. If this secondary work is introduced

too early, it must be with great loss of thoroughness and accuracy in the elementary studies, which are quite as important as the studies thus introduced. If, on the other hand, it is shown to be desirable, as doubtless it may be, to introduce elementary algebra, geometry, and more nature study in the later years of the elementary course, it surely is not necessary to transfer the pupils from the ordinary routine of grammar-school work to the different conditions of the high school in order to accomplish this simple purpose. These studies can easily be correlated with arithmetic and nature study already in the elementary curriculum, while the groundwork in the entire course of elementary studies is being done with that thoroughness and care which are so important to prepare the youthful minds for closer study and more self-reliant work in the higher grade.

Another point presents itself just here. The question assumes that the "elementary" course is "at present" *eight* years. This is true in some parts of the country. In other sections, where the schools are equally good and results attained equally satisfactory, the course is *nine* years.

I apprehend that the difference is mainly this: Where the course is laid down for *nine* years, many pupils will be promoted more rapidly, and so will complete the course in eight, seven, six, and possibly, in rare instances, in five years. On the other hand, where the course is laid down for *eight* years, some, perhaps many, dull pupils will be unable to keep pace, and hence, not being "promoted," will drop back and take nine years. For myself, judging from a large experience and a wide observation at the East and at the West, I incline to the nine-years' course rather than the eight-years'. But it should be the constant aim of the teachers to push the bright ones along faster. It is better to promote quick pupils faster than is laid down, than to drop back the dull ones for a longer course.

By reference to the paper by Dr. Huling, of Cambridge, it will be seen that he prefers nine years for the elementary and four for the secondary course.

Dr. Frank A. Hill, secretary of the Massachusetts Board of Education, writes me: "I incline to an elementary course of nine years. While theoretically there should be no break between the grammar and the high, still, under Massachusetts conditions, there is such a break; that is, large numbers of pupils incline to close their public-school course at the end of the grammar-school course, and this is a pretty strong argument for keeping that course a prolonged one, as at present. I believe it feasible to shorten this course for the brighter pupils who wish to enter the high school earlier, as is done in the city of Cambridge. I believe, further, that it is possible, through the so-called 'enrichment' of the grammar-school course, to make the secondary course dip down into the grammar school in such a way as practically to extend its length."

2. Doubtless each of these studies has a distinct pedagogical value. Much may be said to show how each of them operates to unfold and develop the child's mind, but it is evidently too early yet in our study of child-mind to weigh and measure with accuracy

these several branches, and draw the conclusion that one gives two pounds of discipline while another gives but one pound, or that one furnishes an expansive power of two meters, while the influence of the others is only to the extent of one meter.

Just here, however, as bearing on this question rather than any of the others, I beg to introduce some valuable suggestions from one of the most careful, reliable, and successful educators of New England. He says :

"It seems to me there are *six* lines of work that grow out of the child's twofold environment of nature and man. Each line has its own *logical* development from *natural* approaches. These six are in many cases closely related at certain points, and that relation should be most plainly shown.

"(1) Physical development.

"(2) Mathematical exactness—numbers.

"(3) Scientific phenomena—science.

"(4) Geography.

"(5) History.

"(6) Literature.

"I cannot see how any one of these can be so absorbed in the others as to disappear from the programme. Each has its own line of development. They touch each other at a great many points, and illumine each other at those points.

"Aside from these is the whole matter of *expression*, which may be taught by *specific drill* along with each line above, as the means of expression peculiar to the given line. It seems wiser to associate the drill in expression with each line rather than to have an isolated drill out of connection. We find most of our failures in expression due to this isolation and consequent lack of appreciation at the right time.

"It is not necessary that each line come in the programme each day, but it will give the teacher time enough on each line to consider it thoroughly, to show its relation to the other allied lines, and to drill on the different modes of expression. This is especially true in the grammar grades. In this the reading, writing, spelling, language, drawing, etc., will come in their connection, and receive much more drill than they can get otherwise. If from time to time special exercises in any form are needed, they can be taken more understandingly.

"There are two correlations required—one of the 'content' subjects—*e. g.*, relation of geography to history, not trying to teach one from the other which is abnormal; the other of the expression to the subject to be expressed—*e. g.*, spelling to geography, to history, to literature, etc., a language exercise to history, etc., drawing to science, etc.

"The disconnected teaching of the 'content' subjects, and especially the separation of the expression and content subjects, must be overcome by some arrangement whereby the teacher is to have *time* to do this correlating."

3. Manual training—at least so far as sloyd, sewing, and cooking—should be taught in the upper grades only of the eight or nine years in the elementary school curriculum. Physics, to some extent,

should be taught, especially in the higher grades. Music should find a place in *all* the grades, for reasons too well known to be repeated here. Physiology (including the effects of stimulants and narcotics) should be taught in all grades. This subject, too, has been so fully discussed as to need no argument here. Moreover, it is by law made mandatory in nearly all the States. Latin or a modern language *may* be taught to an elective class in the higher grades of the grammar-school course. This would be in the interest of those who propose to go on to the high school.

9. The general tendency is to make the recitation periods too long in all grades of elementary schools. In one of the best grammar schools in Boston, I was surprised lately to find, in grades from six to nine, periods for a single recitation from fifty minutes to an hour and a quarter.

In my judgment—and this opinion is ratified by some of the best educational minds in the country—in the primary grades the attention of the children should not be held to one subject for more than twenty minutes, and in the grammar grades for not more than from thirty to forty minutes, the latter time applying only to pupils in the eighth and ninth grades.

17. Promotion should not be determined by special examinations or by a series of examinations. The important question to be asked is—not is he an excellent scholar, but is he qualified to appreciate and profit by the studies of the next grade higher. The main point to be decided is what the best interests of this individual pupil demand. Can he pursue the studies of the next grade to advantage? If so, he should be advanced. This should be determined primarily by the opinion of the individual teacher, subject to revision by the principal, and the approval of the supervisor.

COLONEL FRANCIS W. PARKER, *Principal of the*
Cook County Normal School, Englewood, Ill.

1. To my mind, it makes no difference in regard to the division in time, whether there should be eight years and four years, or six and six years. The work should be organically related from the kindergarten, including secondary education. In other words, there should be no break in the work; a pupil should go from the eighth grade to the high school, and continue that work which he has already begun.

2. In a general answer, I should say that no subject in itself has a distinct pedagogical value. The value of any subject is in relation to all other subjects.

3. This seems to be a very much mixed-up question. I should certainly have manual training in all grades of school, from the kindergarten to the university. I should also have physical culture and music. Science should be taught from the first grade on through all grades. I am not prepared to say whether Latin should be taught in the grammar grades or not. At present, I do not think it advisable to introduce Latin until the work in our schools is more pedagogical than now.

4. Sequence of topics should always be adapted to the powers of the child. The development of the child should follow the general development of the race, minus obstructions. I do not understand the last question in No. 4.

5. All education is to develop character, and character is intrinsically ethical.

6, 7, 8. It is possible to unite and correlate all the studies of the elementary school.

9. The power of attention on the part of a class should determine the length of a recitation.

10. All subjects of study should be introduced into the primary grades and continued throughout the eight years.

11. Cannot answer this question, as experience in the subject of concentration is now altogether too limited to make special divisions of time.

12 and 13. Same answer.

14. All pupils should be *educated*, whether they stay in school a week or fifteen years. All pupils should have the same subjects.

15. The best method is not yet known.

16. There should be no special departmental work in the eight-years' course, and very little in the high-school course.

17. Ability to work. The teacher should determine.

JOHN T. PRINCE, *Agent of the State Board of Education*,
Boston, Mass.

3. A widely extended curriculum seems to me desirable for the elementary schools, so as to cultivate a "many-sided interest" and to assist in a harmonious development of the mental powers. But to avoid superficialness, it is important that a careful selection of topics be made (principal types being emphasized) and that a correlation of topics and subjects be made. This correlation should be made in groups arranged and taught according to natural relations. An attempt to correlate all subjects leads to a forced and unnatural association and consequent loss of mental energy.

7. The groups of subjects (not counting music, manual training, and physical culture) are:

I. (1) Nature study, including the elements of physical geography, botany, zoölogy, mineralogy, physics, and physiology; (2) mathematics, including arithmetic, inventional geometry, and the elements of algebra.

II. (1) Descriptive geography; (2) history; (3) civil government.

III. Language, including drawing, reading, spelling, penmanship, grammar, elements of logic and rhetoric, composition, and one foreign language.

Correlation of subjects within each group should be as complete as possible, and the correlation of drawing, reading, and composition with all other subjects should also be close and continuous.

Specialization by departmental instruction may be made accord-

ing to the correlated groups, a special teacher being given a group of subjects in each of several grades.

Thus, with teachers trained for their profession, there would be in my opinion a wise treatment of three subjects of pedagogy now attracting much attention ; viz.,

Extension of the curriculum, departmental instruction, and correlation of studies.

J. W. STEARNS, *Professor of Pedagogy,*

University of Wisconsin, Madison, Wis.

1. To the schools of large cities the question is unimportant, but to smaller places the present division is most advantageous, as it permits a difference of management with pupils above fourteen, who ought to be separated from those younger in order to permit this.

3. Manual training for the muscular correlation and support of intellectual training in realities ; music and art for emotional refinement ; physics, because high-school science cannot be mastered as it should be without elementary training of this sort. I do not believe the mind mature enough to profit by classical training as now pursued until high-school age. A modern language by a so-called "natural method" might be useful.

17. The real interests of the individual pupil. These must be determined by (1) opinion of teachers, (2) written tests. The tests should be prepared by teachers, and revised by superintendent, but can be satisfactory only when approved by both.

S. G. WILLIAMS, *Professor of Pedagogy,*

Cornell University, Ithaca, N. Y.

[On behalf of a committee consisting of the superintendent of the schools of Ithaca, N. Y., the principal of the high school, and two teachers in elementary schools.]

1. With regard to the first question we would recommend that the elementary course should *at first* be seven years and the high school five ; but four of us are of the opinion that where any language other than the vernacular is to be undertaken it is desirable that it should be begun as early as the twelfth year of age.

9. The committee as a whole would recommend that the length of recitation periods should be fifteen minutes for the first school year, twenty minutes for the second, twenty-five minutes for the third and fourth years, thirty minutes for the fifth and sixth years, and forty minutes for any added years ; for the reason that the continuance of active interest in the young requires frequent change of impression, whilst as age advances such changes need be less frequent.

Personally, I would say that I observed in German schools that the *instruction* periods were of the same length for children of six years as for those of fourteen, and that, too, without apparent

flagging of attention. I thought this sustained attention was due to the frequent change in the nature of the operations within the hour, questioning alternately with oral instruction, with slate and blackboard work, with gymnastic movements, and with singing. Might it not be profitable so to modify much of the work in elementary schools as to have more *instruction* and less recitation of lessons, prepared too often without right ideas how to study? In this way the work of the pupils would be wholly guided and inspired by the teacher during all the hours of school, thus making unnecessary the so-called *busy work*, which too often is mere trifling, habituating children to *saunter*.

11. Time should be assigned only for the groups named in No. 7.

14. After some comparison of views, the committee unanimously agreed that the instruction of all pupils should be the same, whatever their supposed destination.

16. The question of specialization of teaching in the elementary schools was felt to present much difficulty. If the only idea is to gain the greatest amount of knowledge in a given time, possibly the highly trained specialist would be most effective; but if the shaping of character and the formation of good habits is made the chief aim, the steady influence of a high-toned teacher would seem to be very important, at least for the very plastic period from six to ten years of age.

17. The committee were unanimously of the opinion that the principle on which promotions should be made should be competency to do the work of the next higher grade satisfactorily. As to the manner in which this competency should be determined, the favorite opinion seemed to be that it should be by examinations conducted by the teachers into whose grades pupils aspire to enter.

The chairman of the committee, however, was inclined to favor a plan outlined in Circular No. 7, 1891, of the Bureau of Education.

APPENDIX III

OPINIONS SUBMITTED TO THE SUB-COMMITTEE ON THE ORGANIZATION OF CITY SCHOOL SYSTEMS

The following are the questions in answer to which the opinions were written :

1. Should there be a board of education, or a commissioner with an advisory council?
2. If a commissioner, should he be elected by the people, or appointed by the mayor, or selected in some other way?
3. What should be his powers and duties?
4. If a board of education, of how many members should it consist?
5. Should the members be elected, or appointed? From the city at large, or to represent districts?
6. Should the members be elected in equal numbers from the two great political parties, or can any other device be suggested to eliminate politics from school administration?
7. By what authority should the superintendent of schools be elected or appointed, and for what term?
8. What should be the qualifications of a city superintendent of schools?
9. Should the city superintendent owe his appointment directly or indirectly to the State educational authorities and be responsible to them rather than to the local authorities?
10. In whom should be vested the authority to license teachers? To cancel licenses for cause?
11. In whom should be vested the power to appoint teachers? In whom the power to discharge teachers?
12. Supposing teachers appointed to a school, who should have the power to assign them to grades or classes?
13. Should the principle of competitive examination be introduced in determining promotions to positions of greater responsibility or emolument?

14. How should the duties of superintendents on the one hand and of principals on the other in the supervision of methods and of teaching be defined?

15. By whom should the course of study be made?

16. By whom should text-books be selected?

17. By whom should promotions be made?

18. By whom should disputes between parents and the teaching force be settled?

19. By whom should a compulsory education law be enforced?

C. W. BARDEEN, *Editor of the "School Bulletin,"*

Syracuse, N. Y.

1. I should prefer a board of education.
2. If a commissioner, he should unquestionably be appointed.
3. I do not see in what respect the Cleveland plan could be improved.
4. Not to exceed seven.
5. Most emphatically appointed, and most, *most* emphatically from the city at large. The representative system is pernicious.
6. There is no board so partisan as a non-partisan board, and it has been a failure wherever tried, especially in Albany and Oswego. The only way to eliminate politics is to appoint the best men, regardless of politics.
7. The superintendent should be appointed by the board of education, and the appointment should be permanent, or at least for a period of not less than five years.
8. He should be a teacher of experience, but not of too long experience, as that is apt to narrow. He should be a man of broad and recognized common sense, a man among men, with nothing of the pedagogue about him, but in bearing and attire and manner able to meet bankers and lawyers and other prominent men as a recognized equal. He should be a man of enthusiasm and earnestness, seeking a place because he wants to make the schools better, and recognizing the office as his great opportunity and life-work. He should be a gentleman, able to control without austerity or harshness, with genuine native sympathy for both pupils and teachers. There are many other qualifications, but if they were all enumerated his wings would sprout and he would fly. These are the most essential.
9. I question whether the State educational authorities can judge of the needs of a locality so well as the local authorities. I should prefer appointment of the superintendent by a board of education appointed by the mayor.
10. The authority to license and to appoint teachers should never be vested in the same person. The superintendent should have one or the other, and I think it is better he should have the appointment; so I see no way to improve upon the uniform system of examinations of the State of New York, which should be binding upon every city as well as every country district.
11. Both should be vested absolutely in the superintendent.
12. The principal, subject to the approval of the superintendent.
13. Never. A competitive examination has no place in teaching. The qualifications of a teacher can never be estimated by an examination. Examinations may determine who is unfit to teach, but not who is more fit to teach than another, or where one is best fitted to teach.
14. The superintendents should lay down general principles of teaching and outlines of methods, and require a certain amount of progress in every school. Beyond this, considerable latitude should

be left to the principals, and individuality encouraged, so far as it does not interfere with the general plan of education in the city.

15. The final authority should be vested in the superintendent. He will, naturally, be assisted by the principal.

16. By the superintendent.

17. By the superintendent, with reference to the board of education only where he is in doubt or desires their moral support.

19. By the school officers exclusively, without reference to the police. It seemed to me that Mr. Seaver's arguments on this point, at Richmond, were unanswerable.

EARL BARNES, *Professor of Education,*

Leland Stanford, Jr., University, Palo Alto, Cal.

1. I believe that a commissioner with an advisory council is superior to a board of education. Centralized authority leads to prompt and definite action, and enables the people to locate bad management.

2. I do not think the commissioner should be elected by the people, as this necessarily confines the selection to local candidates. Neither should I like him to be appointed by the mayor. I should prefer that he be appointed by the advisory council or by the common council of the city.

3. It seems to me his powers and duties should consist in a general oversight of the educational interests of the city, the selection of the superintendent of schools, and a general control of the business side of the school department.

7. The superintendent of schools should be appointed by the school commissioner rather than by the mayor. I should rather have him appointed by a board of education than to have him elected.

8. In the first place, he should be a well man with a good physique and a strong personality, capable of easily influencing women and children. In the second place, he should be thoroughly versed in the best pedagogic thought of his day. Of course there are many other things desirable, such as business capacity, general knowledge of economic conditions, and so on and so on.

9. I think the city superintendent should be responsible to the local authorities.

10. The authority to license teachers I should place in the hands of a considerable board, not too local nor too general. A State board with a uniform examination can hardly meet the requirements of backward and advanced communities within its borders. In large cities I would have a special board of examiners, and in smaller cities I should trust to the county board examiners. I would give the superintendent power to cancel licenses for cause.

11. I would give the superintendent power to appoint and dismiss teachers.

12. It seems to me there can be no question that the superintendent should have the power to assign teachers to their grades or classes.

13. A competitive examination on the basis of academic knowledge does not seem to me a desirable method for determining promotions. If a competitive examination could be held which would cover academic knowledge, professional training, and actual ability to do, then I should say it would be a good thing.

14. The superintendent should have a large supervision over methods and over teaching, but he should be generous and liberal enough to leave all principals great freedom in working out their own problems. It seems to me he ought never to impose a rule of method upon his schools.

15. The course of study should be made by the principals and the superintendent, the superintendent having first called the teachers into counsel on the matter.

17. Promotions should be made on the judgment of the grade teachers, subject to the veto of the principal.

18. Disputes between parents and the teaching force should be settled by the teacher immediately concerned, with the right of appeal to the principal, and beyond him to the superintendent.

NICHOLAS MURRAY BUTLER, *Professor of Philosophy and Education*, Columbia College, New York.

There should be a board of education or school commission appointed by the mayor, without confirmation by the common council or any other body. This board should not be large. A board of ten or twelve members is large enough to administer the school system of the city of New York. The members should be appointed from the city at large, without any regard to wards or electoral districts. They should serve for a considerable term, say five years, and not more than two members should go out of office in any one year. Under an ideal plan the members of the school board should be appointed without regard to their political views, but solely because of their fitness for the office; but, in the present state of municipal administration in America, this is impossible. I therefore favor limiting the choice of the mayor by a provision to the effect that not more than one-half of the members of the board shall belong to one and the same political party.

This board should stand in the same relation to the school system that boards of trustees do to colleges and universities; that is, they should be the ultimate source of power, and should represent the public policy in relation to school matters. They should make all appropriations, audit all bills, and make all of the major appointments. Under the latter phrase I include the superintendent, the assistant superintendents or supervisors, and the principals of schools.

All action taken by any of these executive officers should have the full authority of the board, but this authority should be delegated by a by-law or rule, and not be called for in every matter of detail.

The city superintendent of schools should be appointed by the school board to serve during good behavior and satisfactory incum-

bency. Despite the fact that there have been in our experience admirable superintendents who came to the position without special education and training, I believe that there is a danger here that the country cannot afford to run as part of its permanent administrative policy. I therefore favor a provision that would limit the selection of city superintendents to men who have had either a college education or a previous successful career in teaching and supervision. The city superintendent should owe his appointment to the local board and act as its executive officer. Indirectly, of course, he owes his election to the State, because under our system of government that is the final authority in matters of educational organization and administration.

A board (corresponding to the faculty of a college or university) made up of the superintendent and the assistant superintendents or supervisors should license, appoint, cancel licenses for cause, and discharge all teachers. The appointments should be made from a list prepared after an examination set by this board, and I see no objection to making appointments from this list in order of merit as determined by that examination. It should, however, be borne in mind, that, with the increasing specialization and division of labor that is going on in our city school systems, persons of various and varied qualifications are needed in the schools. There should, therefore, be vested in this board full power to appoint to a given post the person that they deem best fitted to fill the post, whether or not that person be at the head of the competitive list. After teachers have been appointed to a school the principal should have full authority to assign them to grades or classes. In case of alleged injustice or dissatisfaction, there should be the right of appeal to the superintendent.

Your thirteenth question I have partially answered above. It is very necessary, in selecting persons for promotion by competitive examination, to bear in mind the well-demonstrated fact that success in one position is not necessarily an assurance of capability to fill another and higher position. It is possible, however, by keeping careful records of work done, to discover who among the persons holding subordinate posts possess the necessary intelligence and directive power to fill satisfactorily higher and more responsible positions. If this element in the case be kept clearly in mind, then I am in favor of competitive examinations for promotion. I commend to your committee the consideration, with reference to this point, of the system devised for the Department of the Interior at Washington by the present Commissioner of Education.

The board above referred to (not the school board) should make the course of study and select the text-books that may be used in the schools.

Promotions should be made by the principal of each school.

Disputes between parents and the teaching force should be settled by the superintendent.

The compulsory education law should be enforced by an officer of the school board especially appointed for the purpose, and subject to the jurisdiction of the superintendent.

Permit me to add some important recommendations that lie outside of the questions you have submitted to me.

One of these relates to financial matters. It is easy enough to ascertain from the experience of a given community what percentage or proportion of the average assessed value of the property of that community is necessary in order to sustain a school system. This percentage or proportion having been determined upon, it should be placed at the disposal of the school board by law and without the intervention of a common council or any other board. In this way the resources of the school board will expand naturally as the city increases in wealth and population, and many of the difficulties that school boards now labor under will be removed. The money received from this source should be devoted to what I call current expenses. All money needed for permanent account, such as the acquisition of land and the erection of school buildings, should be raised in addition to the above sum by the issue of bonds. The mode in which bonds may be issued is well understood throughout the United States, and the practice, while varied in detail, is uniform in principle.

A second suggestion I deem of great importance, and I base it upon the success of the French people in securing counsel and assistance in the management of the schools from the teaching force itself. All teachers who have passed the probationary period, and are serving on a permanent appointment, should be *ex officio* members of a teachers' council, which should meet regularly for the discussion of questions relating to text-books, courses of study, methods of teaching, and so on. This council should be given the legal right to memorialize the board of superintendents or supervisors, and should elect a certain number of representatives to sit in that board. I need not enlarge on the great advantages that will follow from giving the teachers an indirect voice in the matters that directly concern them. Such a policy promotes the solidarity of the school system, and tends to harmony and order as well as to increase the efficiency of the teaching force.

Still another suggestion is, that in very large cities the care of school buildings and the purchase of supplies should devolve upon a salaried officer appointed by the school board for that purpose. In smaller cities the duties of such an officer can easily be devolved upon the secretary of the school board. An architect for the planning and erection of school buildings will naturally be a third permanent executive officer in the largest cities, where school buildings are always in process of erection. In smaller cities this will not be necessary, and as buildings are needed architects can be specially employed to prepare the plans and to supervise the construction.

J. M. CARLISLE, *State Superintendent of Public Instruction*,
Austin, Tex.

1. There should be both a board of education and a commissioner with advisory council.
2. The commissioner should be elected by the people.

3. His powers and duties should be to preside at meetings of the board of education and at meetings of his council, to superintend buildings and grounds, to appoint committees of the board of education, to approve or veto the orders, rules, resolutions, and acts of the board of education, to make estimates of expenditure, submit recommendations to the board of education, and to exercise generally the same function in reference to the board of education and school matters that the mayor exercises in reference to the city council and the interest of the city other than school officers.

4. The board of education should consist of not less than five and not more than fifteen members.

5. The members should be elected from the city at large.

6. The State superintendent, county superintendent, trustees of county districts, members of city boards of education, should all be elected on the same day throughout the State, at a time when no other officers, except judicial officers, are elected.

7. The city superintendent should be elected by the advisory council of the commissioner. He should first be elected for a term of three years, and to continue thereafter, during good behavior, without re-election.

8. The superintendent should be a man of unquestioned and superior scholarship, extensive professional training, administrative ability, approachability, and *good sense*.

9. City superintendent should be required to hold a license from the State superintendent.

10. The city superintendent should appoint the city board of examiners. This board should examine teachers and report to the superintendent, who should issue licenses. The superintendent should be authorized to cancel licenses for cause.

11. The board of education should elect teachers from a restricted list prepared by the superintendent. Teachers should be dismissed for cause by the board.

12. The principals should be assigned by the superintendent, or elected to specific principalships by the board. The superintendent should then assign a sufficient number of teachers to each school, and the principal should assign them to their respective grades, subject to the approval of the superintendent.

13. The principle of competitive examinations being essentially unsound has no place in school administration.

14. The duties of superintendent, principals, and teachers, should be defined by the board of education.

15. The course of study should be made by the superintendent, subject to the approval of the board of education.

16. Text-books should be adopted by the board of education.

17. Promotion should be made by the teacher, subject to the approval of the principal and the superintendent.

18. Disputes between a parent and a teacher should be decided in the first place by the teacher. Appeal should lie to the principal of the school, and from him to the superintendent, and thence to the board of education.

19. There should be no compulsory education law.

O. T. CORSON, *State Commissioner of Common Schools*,
Columbus, O.

1. It is my opinion that the schools can be best managed by a board of education composed of from three to seven members (depending upon the size of the city) elected by the people at large. I am fully convinced that this board should have upon it members of the two leading political parties, but I do not believe that it is best to have an even number on the board, half selected from each political party. In such boards the tendency is to divide on political lines and tie upon very important questions relating to the management of the schools. The object should be to elect men of such breadth of mind and integrity of character that the question of politics will not at all enter into the management of the schools.

7, 8. The superintendent of schools should be elected by this board of education for a term not to exceed three years. Such a superintendent should have a combination of scholarship and business tact. He should have been, prior to his election, a teacher of several years of experience in the different grades of school work, and thus be enabled to act intelligently in his selection of teachers, and to enter into hearty sympathy with them in their many difficulties.

9. He should be appointed as before stated, and be responsible to the members of the board of education, and through them to the people by whom they are elected.

10. The authority to license teachers should be vested largely in the superintendent of schools ; but, in my judgment, he should not have entire control in this matter. This authority can be given to him by making him a member of the city board of examiners under the present law in this State. This board should both license teachers and also have the power to cancel licenses for just cause.

11. The superintendent should be consulted in the appointment of teachers, and should, under ordinary circumstances, be permitted to make his own selections. The power to discharge should be in the hands of the board, the members of which should always be ready to act promptly upon satisfactory evidence furnished by the superintendent that a teacher was unable to do good work.

12. The superintendent should have the power to assign teachers to their different grades after they have been selected.

13. "Whether the principle of competitive examination should be introduced in determining promotions to positions of greater responsibility or emolument," or not, depends entirely upon what is meant by examination. If the examination is one of scholarship alone, I should answer no; if it means the broader examination which will determine general ability to assume greater responsibility, then I think the principle a correct one.

14. It is my firm conviction that the principals of the different buildings should act in the same capacity as the superintendents of our smaller towns and cities. They should thoroughly inspect the work of the different grades, give suggestions to teachers, do some teaching themselves, and in every way bring up the general standing of the schools. It is an admitted fact that some of the best

schools in the United States are found in some of these small towns and cities, in which the schools are under the control of an active, enthusiastic superintendent. The city superintendent should then have a general supervision of these principals or assistant superintendents. He should determine very largely who the principals should be, hold them to a strict accountability for the success of the work in their various buildings, and consult them very freely regarding the selection of teachers who are to work with them, the promotion of pupils, etc.

15. The course of study should be made out under the direction of the superintendent. In this work he should freely consult the teachers of the various grades regarding the work to be done, and should insist that no *special work* should be permitted to interfere with the *general work* of the schools.

16. Text-books should be selected by a committee composed of teachers and members of the board of education. It might be well to have two of the best teachers, two of the most intelligent members of the board, with the superintendent of schools as chairman of the committee.

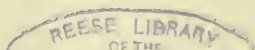
17. Promotions cannot be justly made by any *one power*. Of course, the superintendent should decide doubtful cases after gaining all the information possible, or, rather, he should direct principals how to decide in such cases. Teachers should be freely consulted regarding this important work; not only the teachers from whom the pupils are to be promoted, but also the teachers to whom they are to be promoted. While pupils should be given due credit for the regular daily work of the school, it is my firm conviction that at least three written examinations should be held each year in all grades from the third to the highest.

18. As a rule, I believe that disputes between parents and teachers can be settled satisfactorily without appealing to either principals or superintendent. There may be instances, however, when it may be necessary for the principal to settle such disputes; there may also be very rare instances in which the superintendent should take a hand in the settlement of the difficulty; and there may be an occasional case (there should be very few) in which it will be necessary for the board of education to act upon the report of their committee of discipline, after having carefully investigated the whole difficulty.

19. The compulsory education law should be enforced as provided in the Ohio law. One or more truant officers should be selected, who should act directly under the supervision of the superintendent and principals of the schools.

CHARLES W. ELIOT, *President of Harvard University*,
Cambridge, Mass.

1, 4, 5. The central governing body should be a board of moderate size, appointed by the mayor. The number of members should not exceed ten. It might be composed of ten members two to be replaced each year, or of seven members one to be replaced each



year, retiring members to be eligible for a second term and no more. The members should receive no compensation. In this board should reside the ultimate authority over everything connected with the schools. It should have authority to appoint such agents, officers, and teachers as it might find expedient, and to assign the duties and fix the salaries of all persons employed in the school system.

Its principal agents should be a superintendent, a business manager, and an architect. These officers, and all principals or head masters, should be appointed directly by the board. Although all appointments, regulations, and programmes within the school system should have the authority of the board, the board should be empowered to delegate portions of its authority to its agents at its discretion, with or without requiring formal approval by the board of its agents' action.

The pecuniary resources of the board should be of two sorts : (1) for annual charges, including repairs and improvements, a fixed percentage of the total tax levy for current municipal purposes, this percentage to be in the first instance determined by the actual average ratio of current school annual expenses to other current municipal annual expenses for the five years preceding the date of this determination, the percentage thus arrived at to be alterable after six months on the proposal of the board, approved by popular vote at the next municipal election, a majority of two-thirds being required ; (2) for new grounds and buildings, the product of long loans to be issued by the municipality on the proposal of the board, approved by popular vote at the next municipal election, a majority of two-thirds being required.

The superintendent, the chief officer of the board, should have authority to nominate for appointment by the board an adequate number of inspectors, and these inspectors should be appointed, not with reference to localities or sets of schools, but with reference to the departments of instruction in which they are respectively expert and which they are therefore competent to supervise ; and the board should not be confined in their choice to nominations by the superintendent. The number of inspectors should be determined by the board with due reference to the size of the system. The tenure of the superintendent and inspectors should be during good behavior and efficiency.

The superintendent and inspectors should constitute a body, presided over by the superintendent, holding weekly meetings, and charged with important functions. The several inspectors should make annual reports to the superintendent, and the superintendent an annual report to the board ; and all these reports should be annually published.

II. All teachers, except principals or head masters, should be selected, promoted, and discharged by the superintendent and inspectors acting as a body, first appointments being as a rule open only to persons who have passed general and special examinations conducted by the superintendent and inspectors, the records of these examinations to be for the use of that body only. Certifi-

cates may be given in general terms for use elsewhere. Experienced teachers, and graduates of colleges, scientific schools, or universities, should be eligible for positions without examination and with constructive rank to be determined by the superintendent and inspectors.

After reasonable periods of probation—periods which should ordinarily cover at least eight years for persons who enter the service at the lowest grade—the tenure of all teachers should be during good behavior and efficiency.

All the teachers in the system should be *ex officio* members of an association, one of whose functions should be to elect annually from their own number members of a representative body, to be called the council. The school board should determine from time to time the number of members of the council, and the proportion of this number which should be replaced each year. The membership of the council should be fairly stable, and not so numerous as to make intimate and effective discussion difficult.

All school programmes should be constructed by the superintendent and inspectors with the advice of the council; but decisions should be made only after ample opportunity had been afforded to the council for discussing and criticising the proposals of the superintendent and inspectors.

16. For those grades in which uniform text-books are necessary, the selection of books should be made by the superintendent and inspectors with the advice of the council. For those grades, or in those subjects, in which various text-books may be used with advantage, or for which books of reference are needed, the principals of schools should make the selection.

17. Promotion of pupils should be determined by principals of schools on a general plan made by the superintendent and inspectors with the advice of the council.

Annual appropriations, reasonably constant in amount, should be made by the board for each school for the purchase of books, apparatus, and supplies, all such purchases to be made through the business manager on the order of the principal of the school.

The business manager, a salaried officer, should buy all supplies, oversee all the service in school buildings, direct all repairs and improvements which can be executed without the aid of an architect, and in general be responsible for the condition and the care of all grounds, buildings, and other property belonging to the system.

The architect should not be a salaried officer, but should be paid for designs, drawings, specifications, and superintendence, by commissions, computed in accordance with the customary charges in private practice.

I add a few remarks on the above plan, without attempting any elaborate argument in support of it.

Appointed boards, serving without pay, have proved to be independent, efficient, and trustworthy; as, for example, boards of health, trustees of libraries, park commissioners, and hospital trustees.

The resources of the school board should not depend on votes of the city council, and should rise and fall automatically with the general expenditure for city purposes.

The superintendent and inspectors would be a body of experts qualified to administer the school system in all its details.

The council would be an advisory body through which the opinions of the teachers about programmes, pupil promotions, books, and methods, could be officially brought to bear on the superintendent and inspectors.

Precedents already exist for almost every feature in the plan.

CHARLES B. GILBERT, *Superintendent of Schools*,

St. Paul, Minn.

My present judgment is in favor of a board of education of not more than five members, elected by the people from the city at large for long terms, say five years, making one election each year. Of these five, provision should be made that not more than three shall belong to one political party.

This board should appoint the city superintendent for an indefinite term, subject to removal for cause, and the law should require that the city superintendent be a man of liberal education and professional training or experience. If the State authorities have anything to say about it, it should be simply to certify to these qualifications. I have little faith in State educational authorities as a whole. The authority to license teachers should rest in the superintendent, with an advisory committee of the board. The authorities who issue a license should also have the power to cancel it for cause. The superintendent should have the power to appoint and discharge teachers. I am uncertain whether it would be wise for the board to have the power to confirm or not.

Teachers should be assigned to grades in the school by the principal of the school, after consultation with the superintendent.

The plan of competitive examination does not seem to me a good one.

The relative duties of superintendent and principal it would be impossible to define fully in a short statement. In general, the superintendent should determine the general methods of work and the principles to be employed, and to the principal of the school should be left their development.

The course of study should be made by the superintendent. Text-books should also be selected by him.

Promotions should be made by principals in consultation with their teachers.

Disputes between pupils and the teaching force should be referred to the superintendent.

The superintendent should also have the supervision of the enforcement of the compulsory education law.

In regard to boards of education, it is my opinion that their duties should be broad but not specific. They should have power to fix upon a schedule of salaries, and to determine in a general

way what funds are required for the running of the schools, and how they are to be expended ; what buildings are to be erected ; what supplies purchased. They should appoint a superintendent, who should have entire control of the educational work of the schools. They should appoint another man, or two if necessary, who should attend entirely to the business side, such as the purchase of supplies, erection and care of buildings, appointment and supervision of janitors, relieving the board of those duties which are burdensome to business men, and which boards always do badly.

I think with some such plan as this we could have better boards than are common, and be free from the peril which I feel rests in the absolute power of the commissioner. I am aware that it is a prevalent opinion that the members of the board should be appointed by the mayor, and not elected by the people, and possibly I am wrong in my opinion ; but I certainly have not yet seen an instance of the continued successful operation of one-man-power in this country—that is, of one man responsible directly to the people—and I doubt whether the United States is congenial soil for such a plan,

PAUL H. HANUS, *Assistant Professor of the History and Art of Teaching*, Harvard University, Cambridge, Mass.

1. A board of education.

2 and 3. Answered in 1.

4. For cities comprising one hundred thousand inhabitants, or fewer, the board of education should consist of five members ; for larger cities, the board of education should consist of a somewhat larger number, say, seven, nine, or eleven—never more than eleven.

5. (1) Appointed by the mayor at stated times, as remote as possible from the city elections. (2) From the city at large. The desirability, when such desirability exists, of having all sections of the city represented, would naturally be urged on the mayor ; but he ought not to be obliged to select the members of the board from localities having fixed boundaries.

6. Electing or appointing the members of the board of education in equal numbers from the "two great political parties" will not eliminate politics from school administration. On the contrary, to recognize the existence of political parties in connection with the appointment of members of the board of education—a matter with which politics has absolutely nothing to do—is to affirm a relation between them, which afterwards has to be considered.

There are, fortunately, some cities in which politics does not enter into the administration of school affairs. Throughout the country, wherever political influence is felt in the administration of school affairs, every effort should be made by the superintendent, and all worthy citizens whose co-operation he can secure, to cultivate public opinion in favor of the complete elimination of political influence from school affairs. It should be universally recognized that a candidate's political opinions have absolutely nothing to do with his qualifications for membership in the board of education. The

question of his politics, so long as he is a man of good character, ought never to be raised either for or against any candidate.

7. By the board of education, at first for a probationary term of two years; then for a longer probationary term, say five years; thereafter (for a term without stated limit) during efficiency and good behavior.

8. He should be a man of character, refinement, scholarship (he should have a college education, at least), professional training (collegiate or university study of education), and successful experience as a teacher or supervising officer, or both.

9. He should be appointed by, and should be responsible to, the local authorities.

10. (1) In the superintendent. (2) In the superintendent, with the right of appeal to the board of education.

11. (1) The board of education should elect the superintendent and a business officer. The business officer should be the business agent of the board, the executive head of all its financial or business affairs. The superintendent should be free from all administration of business affairs in order that he may devote himself to the administration of the work of instruction of which he is the executive head. The superintendent should appoint all assistant superintendents, principals, and teachers. (2) In the superintendent, with the right of appeal to the board of education.

12. The principal of the school.

13. No. Promotions should be determined by proved efficiency; in cases of equal efficiency, by seniority of service.

14. The assistant superintendents and principals, together with the superintendent as leader and presiding officer, should constitute a professional advisory council. In this council the superintendent should occupy about the same relation to the other members that a college or university president bears to the members of a faculty. He should have the right to propose measures, and to recommend and debate measures proposed by other members of the council. He should have the power to enforce any measure favored by a majority of the council, and no measure should be adopted without his approval. In their own buildings principals should administer their schools without interference. The right of the superintendent to inspect, criticise, and advise the assistant superintendents and principals in regard to their teaching or administration, or both, should, however, be definitely understood: the superintendent is the executive head of the school system in everything that pertains to the work of instruction; the assistant superintendents and principals are his subordinate officers. It should never be forgotten, however, that the principle of all official relations between the superintendent and his subordinates should be *co-operation*.

15. By the Advisory Council defined in 4.

16. By the Advisory Council defined in 4.

17. By the teachers of the classes and the principals of buildings without special examinations for promotion. Such examinations should be resorted to only in disputed cases.

18. All disputes between parents and teachers should be reported

by the teachers concerned to the principal, at once, and all minor disputes should be adjusted by the teachers and parents directly concerned, with the co-operation of the principal whenever such co-operation is desired by either party. If the teachers, parents, and principal fail to agree, the co-operation of the superintendent should be sought; and whenever the matter in dispute is important, the superintendent should be fully informed from the start whether his co-operation is required or not. If no agreement can be reached through the superintendent's co-operation, the dispute should be carried by the parties concerned—*i. e.*, parents, teachers, principal, and superintendent—to the board of education.

19. By the local authorities through special officers elected by the board of education on the nomination of the superintendent.

WILLIAM R. HARPER, *President of the University of Chicago*,
Chicago, Ill.

1. Commissioner without advisory council would be better; more definite policy. But a board is better.

2. Appointed by mayor. More definite responsibility.

3. I. *Financial*. Fixes school budget; fixes salaries; audits accounts; gives orders on the treasurer for same.

II. *Educational*. Appoints teachers on recommendation of superintendent; promotes teachers on recommendation of superintendent; dismisses teachers on recommendation of superintendent; fixes curriculum on recommendation of superintendent; fixes textbooks on recommendation of superintendent.

4. Not less than five nor more than thirteen.

5. Appointed from city at large.

6. I do not approve of a bi-partisan board. It is worse than any other, so far as the spoils system is concerned. It should consist of men of such character that the board will be really *non-partisan*. I do not believe that any machinery will make a school board *non-partisan*. Nothing can do that but such a state of public opinion as necessitates the appointment of such men as school commissioners as will be above partisanship.

7. By the school commissioner, or by the school board. Term, good behavior.

8. It would be easier to say what they should *not* be. He should be a man (1) of comprehensive education, liberal and professional; (2) of wide and successful experience in instruction and school management.

9. No.

10. Concurrently in the State and in the city board of education, with approval of superintendent.

11. In the board, with approval of superintendent.

12. The principal.

13. Yes, but it should not be the sole criterion. The personal equation should decide first who should be admitted to such examination.

14. The superintendent should deal with general questions; principals, with details.

15. By superintendent and principals, with reservation of veto to board in case of added expense.

16. Same as 15.

17. By board, on recommendation of superintendent and principal; or, in care of principal, on recommendation of superintendent.

18. By the superintendent, with right of appeal to board.

19. By the board.

F. A. HILL, *Secretary of the State Board of Education*,
Boston, Mass.

1. There should be a board of education, whose functions should be as nearly legislative as possible.

2, 3. See answer to No. 1.

4. The number of members should be small. The term of service should be at least three years. One-third should go out each year.

5. The members should be elected by the people at large.

6. Political parties ought not to be considered in their election. Only the good sense of the public can eliminate politics from school administration.

7. The superintendent should be appointed by the board, to serve during efficiency.

8. He should be liberally educated, have a practical interior acquaintance with schools, be tactful, have the qualities of leadership, etc., etc.

9. The superintendent should be responsible to the local authorities.

10. The superintendent should have the initiative in matters of licensing teachers and canceling licenses, the board serving as a final court of appeal.

11. See answer to No. 10.

12. The head master should have the power of placing teachers within his jurisdiction or field of work.

13. If the idea of a competitive examination includes the whole subject of fitness, personal, scholastic, professional, and executive, and is not limited to paper results, it is an idea to be favored. The best men should go up, and the selection of the best men involves the comparison of men. A plan of some kind that shall aid in arriving at wise selections is certainly desirable.

14. The superintendent deals with general policies; the principal should be free within the limits of general policies and in his own field.

15, 16, 17, and 18. The superintendent and his aids should control courses of study, the selection of books, apparatus, etc., promotions, the settlement of disputes between parents and the teaching force, etc.; that is, the initiative and first decisions should come from his office, the board acting in cases where ultimate

decisions rest with the board by law and serving as a final body of appeals and decisions.

19. The compulsory laws for education should be enforced by truant or other officers, responsible directly to the superintendent, and finally to the board.

The underlying principle of the foregoing answers is this :

A board of education should confine itself to legislative functions, to questions of school accommodations, amounts of money needed, salaries, the grander policies of education, etc. Its members are presumably not specially qualified, and usually it is physically impossible for them, to attend wisely to details of administration or to the settlement of purely professional questions. Everything of an executive nature, and everything that, in administration, concerns the wise and successful pedagogical treatment of school matters, should be intrusted to the superintendent, who should have associates and helps enough to do the work. One function of a board is to back up and support a superintendent in a vigorous policy.

In other words, all matters of an educational nature that require expert consideration should be relegated to a competent, well-paid executive expert, who should have the aid of other competent, well-paid experts. Their decisions in the matters intrusted should usually be accepted and supported. They may refer questions of doubt to the board, and the board should always be viewed as the place for appeals and the source of all authority, under the laws.

These views I hold in a tentative way—not as absolutely final ones—for I may not be wise in proposing details of a general policy that I firmly believe in; namely, the policy of centering purely educational responsibility in educational experts, so paid, of such tenure, and so supported by a wise board behind them, that is content with its general control of great policies, and its ultimate control, in cases of appeal, in all matters, that experts shall not shrink from a fearless policy.

B. A. HINSDALE, *Professor of the Science and the Art of Teaching*, University of Michigan, Ann Arbor, Mich.

Before proceeding to answer the questions, I wish to observe that it is difficult or impossible to answer them in absolute and unqualified terms. What is best for one city or town is not necessarily best for another. It is not the American, or rather the Anglo-Saxon, way to take the high *à priori* road, but rather to take causes and conditions, particular as well as general, into account. Hence it must be understood that I should by no means be bound by the following answers in all cases. In other words, the answers will relate to what I conceive to be average conditions.

1. I incline to the commissioner with an advisory council. In this way power, and especially responsibility, is focalized, which is a very important thing in public-school matters.

2. I incline to the popular election of the commissioner, as being more consonant with the spirit of our instruction.

3. His powers and duties should be executive and administrative, not legislative or judicial.

4. I incline neither to a large board nor to a small one. A small board creates suspicion and often promotes scheming. A large board tends to become too irresponsible and reckless. What I have said about boards will apply as well to advisory councils. There is, in my mind, even more objection to a large board than to a large council, because the board will be charged with executive and administrative duties to a much greater extent than the council.

5. On the whole, I incline to appointment, as, for example, by the judges of the courts. I see no objection to both city representation and district representation. If the members are to be elected, I incline to city representation.

6. This would be desirable, but I see no way to bring it about except through the operation of public opinion. Such a division as is referred to could hardly be secured by means of positive laws. If leading men in the two political parties would agree to it, and see to it, as was formerly the case in Minneapolis, as perhaps is yet, the end could be accomplished.

7. If there is to be a commissioner and council, the commissioner should nominate and the council confirm. If there is to be a board, the board must elect. The term of office should be good behavior, or if it has a time limit it should be a long one.

8. If there is a commissioner and council, so that the city superintendent will be relieved of many business matters that sometimes fall to him, I think it very desirable that the superintendent's strength should lie on the pedagogical side rather than on the business side. Still he must be a man of good business and administrative sense. His great functions I conceive to be pedagogical.

9. I should answer this question decidedly in the negative. It is contrary to our cherished ideas of local self-government, and would, in my opinion, promote evil rather than good. I am unable, however, to say how the State system operates in Virginia, where it prevails.

10. The licensing authority and the canceling authority should be the same. I think it would be a good plan to put the nomination of examiners in the hands of the superintendent, and the confirming authority in the hands of the board or council. One great need in our schools is larger professional influence in the licensing of teachers.

11. The power of appointment and the power of discharging should be the same. I like the Cincinnati and Cleveland plan. If this cannot be secured, then the board must elect; in no case should the commissioner, if one, appoint.

12. The assignment should be made by the superintendent, acting in conjunction with his assistants.

13. Something can be said on the affirmative side of this question. However, competitive examinations test only scholarship and thinking ability, and as these are by no means the only elements entering into the appointment, the test would not be sufficient. Still I

am inclined to think that competition could be usefully employed to a limited degree.

14. An adequate answer to this question would require a magazine article. I can only say that the ultimate source of instruction in regard to methods and teaching must be the superintendent. Still the principal should have a distinct status. Teachers should have some measure of responsibility to the principal, but I should strongly oppose a system that would preclude the teacher from reaching the superintendent, or the superintendent from reaching the teacher, save through the principal. The teacher should have a double loyalty and a double patriotism, much as the American citizen owes loyalty to the State and the nation.

15. Courses of study should be formally made by the board or council, but they should be really made by the superintendent, assisted by his advisers.

16. I answer this question in the same terms as the fifteenth.

17. Promotions should be made by principals, acting in conjunction with teachers on the one side, and the superintendent and his assistants on the other.

18. That will depend upon the nature of the dispute. Many disputes can be settled directly by bringing the parent and the teacher together, but some cannot be so settled. In this second case, the settlement should be effected, as a rule, by the parent and the superintendent, not by the parent and the principal; still there will be cases when the intervention of the principal will conduce to good results.

19. I know of no better way than for the school authorities to appoint, under the law, a school police, not using that name, however. Information must come, of course, from the superintendent's office directly, but ultimately from the teachers. The truant officer, or school policeman, should be in constant close connection with the superintendent's office.

D. L. KIEHLE, *Professor of Pedagogy,*

University of Minnesota, Minneapolis, Minn.

1. The essential to an efficient organization is one mind capable to comprehend the entire system—capable in intellect and administrative ability. To meet the demands of details he should have an advisory board. Hence I believe in a commissioner.

2. He should be appointed in a deliberate manner by some responsible authority. When our cities elect mayors in the spirit of municipal reform, they will be well fitted to make the appointment.

5. The members should be comprehensive in their intelligence and sympathies. In such case there would be no necessity for electing by districts.

6. The selection should be without formal recognition of political parties.

7. The superintendent of schools should be carefully selected. This cannot be done by elections or caucuses.

8. Besides his scholastic preparation, he should have a theoretical

preparation well tested by experience. He should know men, and be well able to administer educational affairs in the selection of teachers, and in supporting and improving those in the service.

11. The nomination of teachers should be with the superintendent, the same to be appointed or confirmed by the board.

12. Appointment or assignment to grades must be left with the superintendent.

13. Such examinations should be made as will determine fitness. Mere scholastic tests are not sufficient.

15. Courses of study should be made by some one representing the wisdom and experience of the entire corps and profession of teachers. This means the experience and thought of the educational world adapted to the needs of a particular community. The city superintendent should be capable of this.

16. Persons capable of using tools ought to be capable of selecting them.

17. Persons capable of teaching ought to know when their work is done, or, in other words, should decide promotions. Of course, there must be an equalizing agency, to make up for the defects of teachers.

18. By the superintendent.

19. By some authority independent of the educational.

COLONEL FRANCIS W. PARKER, *Principal of the*
Cook County Normal School, Englewood, Ill.

1. A board of education.

2. Elected by the people at large at a time when there is no other election.

3. To select a superintendent capable of managing a city school system. The board should be able to judge of the ability of the superintendent and of his work, and should support him in all that he tries to do, so long as they are satisfied that he is equal to the work.

4. Five members.

5. Elected at large from the city on one ticket. It would be a good plan to elect one member each year.

6. The election of boards of education should be entirely separate and apart from party politics. Members should be selected for their business ability. By "business ability" I mean men who have the sound judgment and common sense to select a competent manager or superintendent, and to support him while in office.

7. By the board of education, for a term of not less than five years.

8. A man or woman of excellent education; not necessarily a graduate of a college or university. Should have a thorough professional education; a practical teacher, if possible. If not a teacher, should have a comprehension of the science of education, and know educative work when he or she sees it. The principal function of a superintendent is to select and *teach teachers*.

9. The school affairs of a city should not in any way be managed by the State authorities. The common schools should depend upon the people who pay the money for their support.

10. In the superintendent.

11. Principals should be allowed to nominate teachers from a selected list made by the superintendent. A request to discharge a teacher on the part of the principal should be final. Either the request should be indorsed or the principal discharged. All power to appoint and discharge teachers, however, should be vested in the superintendent.

12. The principal of the school.

13. All promotions of teachers to better salaries and more responsible places should be made upon *merit* alone ; there should be no competitive examinations. Merit should be decided by actual teaching.

14. The principals should be the advisory council of the superintendent ; the superintendent should supervise the principals, and the principals should supervise their own schools. A principal should be, virtually, supervisor of his own school, and the superintendent should decide, by examinations and inspections, whether he is capable of doing such work.

15. By the superintendent, with the principals as his advisory council ; the principals, in turn, should take and consider the advice of their teachers.

16. By the superintendent, under the advice and counsel of his principals.

17. All promotions should be made by the teacher of a class or grade.

18. By the principal of the school, with an appeal to the superintendent.

19. By the principal of a school, aided by all his teachers, and supported by the superintendent. All truant officers should be under the immediate control of the superintendent.

The whole question of school supervision, as in all other business operations, may be summed up in one word, "*responsibility*."

HENRY R. PATTENGILL, *State Superintendent*
of *Public Instruction*, Lansing, Mich.

1. I think I am in favor of a board of education.

4. This board should not be a large one—say six or eight for a large city.

5. I would have the members elected by the people at large.

6. I would have the arrangements so made that two should be elected each year—one from each of the two principal parties—and the person so chosen should be nominated in district caucuses conducted on the most approved and modern plan ; that at these caucuses members of any political parties could vote, but that it should be understood that the person selected should belong to the Republican or Democratic party, or some other party, in accordance with

the situation of the political wheel at that time. That is to say, all that vote should vote to nominate some Republican one year, and a Democrat the next year ; but when nominated these names should be placed upon both the tickets, Republican and Democratic. This plan has been tried in Lansing for several years, and works very satisfactorily. Politics do not enter into the choice of our school board. Ours, however, are chosen by wards. The citizens of the ward assemble in caucus and vote for a member of the school board to be placed upon the ticket, one party having it one year and one the next. Both parties by agreement abide by the decisions of these caucuses.

7. The superintendent of schools should be appointed by the school board for life or good behavior.

8. The city superintendent should have a thorough education, be a man of excellent business ability, a man of unusual common sense, possessed of genial manners, and having the power of inspiring and encouraging teachers to do good work.

9. No.

10. In a committee from the school board and the city superintendent, their examination questions and methods of examination subject to the approval of the State superintendent of public instruction. The power to cancel licenses should be held by the body that grants the license.

11. The city superintendent should be the power to appoint teachers and the power to discharge.

12. The superintendent, in conference with his principals, should be the power to assign teachers to grades or classes.

13. Yes.

14. The city superintendent should have the general charge of the affairs of the schools, and be seconded in his efforts by the principals, who in turn should have charge over the individual schools over which they are appointed. Principals should be held responsible for the work done in these schools, and should be subject to the guidance and direction of the city superintendent.

15. The course of study should be made by the superintendent and principals working conjointly.

16. Text-books should be selected by superintendent and principals.

17. Promotions should be made by the principals, subject to approval of the city superintendent.

18. Disputes between parents and the teaching force should be settled by principals, with power of appeal to the city superintendent.

19. Compulsory education laws should be enforced by the school board, placing the executive duties of the office in the hands of a truant officer who is not a member of the police force, who receives a compensation by the day, and the law should be so arranged that the parent or guardian who fails to comply with its provision may be subject to a fine or imprisonment. It should be made the duty of the board to appoint a truant officer.

J. G. SCHURMAN, *President of Cornell University,*

Ithaca, N. Y.

In reply to questions 1-6, I would say that, in my opinion, there should be provided for every city school system a board of education, and that such board should consist of a large number of members in order to prevent manipulation which might bring it under the control of one man or one faction. In a city of twenty thousand I should think twelve members the minimum, and in larger cities, where the population is counted by hundreds of thousands, I should not think a board of fifty or sixty too large. In my opinion, the members of this board should be elected by the people and hold office for a considerable length of time—three or four years at least. They should not all retire at the same date, but a fraction of the number—say a third or a fourth—should go out annually. These members should, I think, be chosen to represent both districts and the city at large. This dual system would secure the consideration of local wants and peculiarities, and at the same time the well-being of the city schools as a whole. In reply to the sixth question, I must state what will sound like a paradox in theory ; namely, that, in order to keep politics out of the schools, the members of the board should be elected in equal numbers from the two great political parties.

In reply to questions 7-9, I think the superintendent of schools should be appointed by the board, not elected by the people, and that his term of office should be during good behavior. The most important qualification of a city superintendent is, in my opinion, the capacity to select good teachers. He has, no doubt, other duties, but, however well he fulfills them, the city schools will be a failure unless they have been supplied with good teachers. With good teachers other defects may be overcome. I do not think that the city superintendent should owe his appointment directly or indirectly to the State authorities, or be responsible to them rather than to the local authorities.

In regard to question 10, I hold very strongly to the opinion that teachers should be licensed by the State. If the profession is to enjoy the dignity of other professions—say the law—there should be uniform tests for admission to it, and candidates who pass them satisfactorily should enjoy the privilege of practicing their profession and be eligible for appointment in every part of the State. If a State board licensed teachers, it would also be their duty to cancel licenses for cause, which cause would, however, be reported to them by the city superintendent.

In reply to questions 11-13, I think the appointment of teachers should be in the hands of the board of education on the nomination of the superintendent. Should the board of education refuse to act on the nomination of the superintendent, or appoint other candidates, the breach between the superintendent and the board would be irreparable, and the superintendent would be forced to resign. The preceding holds true also with regard to the discharge of teachers. The superintendent should assign teachers to grades

or classes ; this is a matter with which the board has nothing to do. The principle of competitive examination should, in my opinion, not be introduced in determining promotions to higher positions. Worthiness of promotion in the teaching profession depends upon so many circumstances, the character of which cannot be evaluated by examination papers, but which can be intuitively observed and estimated by a competent superintendent, that I should have no hesitation in rejecting the competitive method of promotion and trusting the subject to the superintendent. If it seems like giving him large powers, I answer it is in the main for the exercise of such powers that that official exists. The office of the superintendent adds to the mechanism of the school system the infinite value of personality, and we must be careful in all our regulation of the subject not to contradict the end for which the office exists.

In reply to question 14, I should say that no definite answer can be given. Superintendent and principal must work together. And in dealing with the principal the superintendent should make his power just as little felt as possible. The consciousness of the principal as responsible head of the school should not be disturbed. On the other hand, the supreme power of the superintendent need not be abandoned.

In reply to questions 15-19, I would say that, in my opinion, courses of study should be made by the superintendent, but approved by the board of education, and similarly also with regard to the choice of text-books and with promotions. As to disputes between parents and teaching force, they should be settled by the superintendent, with the reservation of the right of appeal to the board of education. A compulsory education law should be enforced by the superintendent with the aid of the police.

CHARLES F. THWING, *President of Western Reserve University*, Cleveland, O.

1. A commissioner, with an advisory council. Reason, centralization of responsibility.
2. Appointed by the mayor. Reason, centralization of responsibility.
3. Full responsibility for the conduct of the educational system.
4. Answer superfluous, by reason of answer to No. 1.
5. Answer superfluous, by reason of answer to No. 1.
6. Create a public spirit, which shall allow members of any advisory council to be chosen upon character and ability, without reference to partisanship.
7. Let the superintendent of schools be appointed by the commissioner or by the mayor. I should make the term not less than four years.
8. He should know everything, and be able to do everything, pertaining to the public schools !!
9. Better to make their responsibility to the local authority.
10. In the superintendent, in both instances.

11. In the superintendent, in both instances.
12. In the superintendent, ultimately. He may use the principals of the schools in securing knowledge.
13. No. Let continued work be the test.
14. Let the superintendent have the responsibility, and let him divide the supervision, as his judgment dictates.
15. By the superintendent, and by him calling to his aid any one and every one who can give to him the least help.
16. Same answer as given to No. 15.
17. By the superintendent.
18. By the superintendent.
19. By the commissioner.

These answers are based upon the general proposition that the superintendent is to be responsible and the efficient head. Through this principle, I think, we get better results than through any other.

E. E. WHITE, Columbus, O.

I do not believe there is even an ideal school system equally adapted to all conditions. The best system for one city, with its school history and limiting conditions, may not be the best system for another city. I am not sure that the same system would be equally well adapted to cities of like size in different sections of the country. An ideal system for a city in New England might not be the best possible system for a city in the West or in the South. Past as well as present conditions and influences should always be considered in school legislation. Certain legislation may be required to correct evils that have intrenched themselves in school administration, and this legislation may be very unwise under other and different conditions.

I may also add that I have little faith in the ultimate success of any school system that is placed beyond the reach of the people. Their will in school affairs is sure to be law, and when school administration loses the confidence of the people, they will find a way to change it. The true end, as I see it, is to provide such a system of school administration as will win and hold the confidence of school patrons.

Please excuse the brevity, and also the uncertainty of some of my answers.

1. There should be a board of education, and also an executive officer having charge of the business department of school affairs, and a superintendent of instruction having charge of the schools proper. The general duties and responsibilities of each of these executive officers should be defined *by State law*.

I am inclined to think that the head of the business department should be appointed by the board of education, for not less than five years, and that his acts should be subject to the approval of the board. If, however, he is to be supreme in school affairs, and the board only an advisory council, he should be elected by the people.

In general terms, he should be the executive officer of the board

in all business affairs, and his duties should not be left to the board, but should be defined by the law creating the office.

4. The number of persons constituting the board will depend much on conditions. As a rule, the board should not consist of less than five members, nor more than fifteen. More will depend on the *fitness* of the members than their number.

5. Cannot answer definitely. There is probably no "best plan." That plan is best which works the best, and only experience can settle this. In one city, the election of school directors works well; in another, it is the source of evil. In one city, the appointment by the mayor secures good men; in another, it fills the board with politicians, possibly the partisans of the mayor. I am inclined to think that the election of members by districts works better in most instances than their election by the city at large. But the districts should not correspond with wards, so often run by ward bummers.

6. I wish I knew how to organize a city school system *in touch with the people*, and yet free from the control and corruption of party politics. I would at once get the plan patented, and retire from hard work! I think that a school board should not be exclusively composed of men of one political party, and this is the basis of my objection to the election of the members on a general ticket. No school board ought to be organized on political lines. But I leave this question to the wisdom of the Committee of Fifteen.

7. Much will depend on the responsibilities and duties of the superintendent. If he is to be the real supervisor of school work, he ought to be appointed for not less than five years, nor more than ten. I doubt the wisdom of appointing superintendents for life. Few men can successfully supervise a system of schools more than ten years, and fewer more than twenty years. They are too often unable to see real defects in their own schools, or to devise plans for their correction. The schools fall into ruts. All depends, however, on the qualifications of the superintendent. The best method of appointing a superintendent I leave for the committee to determine.

8. A school superintendent should be a Cæsar, a Solomon, and an angel, all in one person! Who can describe his make-up? As a supervisor of instruction, he should be a scholar and an educator, practically acquainted with the science and art of teaching. But I forbear.

9. I am not competent to answer this question. The experience of the country, with few exceptions, is in the direction of local control and management of schools in cities and towns. I see little hope of changing this, even if desirable, except by general statutes regulating local management.

10. The authority to license teachers should be vested in a board or committee of experts, not less than three in number, and these examiners of teachers should be confirmed and commissioned, if not appointed, *by State authority*. The superintendent may be a member of this licensing body, but, if he has the appointment of teachers, his relation to their licensure should be advisory. I do

not favor the investing of the superintendent with the power to license and also to appoint teachers. If the superintendent has not the power of appointment, he should be a member of the board of examiners or licensure.

11. The superintendent should be vested by law with the power to select and appoint teachers, and also to assign them to their positions. His appointments may be subject to the approval of the board, under specified limitations. The power to appoint should carry with it the right to discharge for cause, subject to the review of the proper court. The essential condition here is that the superintendent's power and duty in these directions should be clearly defined by *State law*, not by regulations of the school board. For a fuller answer to this question, I refer you to the inclosed paper on "School Superintendence in Cities."

12. Answered above.

13. I have not over-confidence in competitive examinations as a means of determining promotions to school positions of higher grade or emolument. Certain essential qualifications cannot be disclosed by a formal examination, or measured by a per-cent. scale. An examination is largely a test of knowledge, whereas success depends as well on ability and character.

14. In general terms, the superintendent should have charge of the schools as a whole, and the principal should be held responsible for the efficiency of the schools under his immediate control. Principals are local superintendents, acting under the direction and oversight of the general superintendent, and in harmony with determined plans and purposes. I cannot undertake a complete statement of the duties of each, much less their proper co-ordination.

15. The superintendent, with the assistance of associate superintendents and principals. It may be well to provide for the approval of the course by all supervisors acting as a body. Under present conditions in most cities, the course should be finally approved by the board of education.

16. The text-books should be selected by those who make the course of study, since they are essentially a part of the course.

17. Promotions within the grades under the direct supervision of the principal should be made by him. Promotions *from* one school or group of schools under a principal should be made by the superintendent on the judgment of teachers and principals, properly ascertained. I like, as you know, the plan of monthly estimates, with examinations for special cases.

18. Complaints by parents should first be made to the principal, and then, if desired, to the superintendent. It may be wise to provide for an appeal from the judgment of the superintendent in specified cases, but his decision should, in most cases, be final. When unsatisfactory, it may be well for him to seek its reference to a committee composed of competent persons.

19. I have no definite opinion on this subject.

I have thus tried to comply with your request by giving you "*running*" answers to all the questions. I would like to be more specific on the manner of the superintendent's appointment. This,

as I see it, will depend somewhat on the manner in which the board is organized. A school system should have two executive officers, one having charge of what may be called the *business* department of the system, and the other of the internal work of the schools, the *instruction* department. These should be *co-ordinate* officers, and neither should be appointed by the other. If the superintendent of instruction is appointed by the head of the business department, he is thereby put in a subordinate position, and *also his department*. It so strikes me, but this may be the *less* of two evils in a given city. If the board is not to appoint the superintendent, as well as the head of the other department, the selection and appointment of the superintendent should be vested in some outside authority, or he should be elected by the people.

The *special* reform in school administration needed is the differentiation of the department of school supervision and its investment with well-defined functions and powers *by State law*. See inclosed paper.

INDEX

INDEX

- Algebra, in elementary course, 55, 95.
 relation of, to arithmetic, 74.
 Greenwood on, 102.
- Analysis and isolation should precede
 synthesis and correlation, 85.
- Arithmetic, abridgment of, Greenwood
 on, 101.
 Maxwell on, 112.
 alternation of mental and written, 58.
 Greenwood on, 102.
 amount of time devoted to, 56.
 arrangement of topics in, Green-
 wood on, 102.
 five years sufficient for study of, 57.
 psychological importance of, 53.
 relation of, to mathematics, 52.
- Biography, use of, introductory to his-
 tory, 65.
 use of literary, discouraged, 84.
- Board of education, choice between
 commissioner and, Bardeen
 on, 200.
 Barnes on, 201.
 Butler on, 202.
 Carlisle on, 204.
 Corson on, 206.
 Eliot on, 207.
 Gilbert on, 210.
 Hanus on, 211.
 Harper on, 213.
 Hill on, 214.
 Hinsdale on, 215.
 Kiehle on, 217.
 Parker on, 218.
 Pattengill on, 219.
 Schurman on, 221.
 Thwing on, 222.
 White on, 223.
- Cleveland plan for, 122, 125.
 election of, Bardeen on, 200.
 Carlisle on, 205.
 Eliot on, 207.
 Gilbert on, 210.
 Hanus on, 211.
 Harper on, 213.
 Hill on, 214.
 Hinsdale on, 216.
 Kiehle on, 217.
 Parker on, 218.
 Pattengill on, 219.
 Schurman on, 221.
 White on, 224.
- Board of education, politics in, Bardeen
 on, 200.
 Carlisle on, 205.
 Hanus on, 211.
 Harper on, 213.
 Hill on, 214.
 Hinsdale on, 216.
 Kiehle on, 217.
 Parker on, 218.
 Pattengill on, 219.
 Schurman on, 221.
 Thwing on, 222.
 White on, 224.
- powers of, 121.
 Gilbert on, 210.
 Seaver on, 131.
- selection of members of, 119.
 size of, 120.
 Bardeen on, 200.
 Carlisle on, 205.
 Eliot on, 207.
 Gilbert on, 210.
 Hanus on, 211.
 Harper on, 213.
 Hill on, 214.
 Hinsdale on, 216.
 Parker on, 218.
 Pattengill on, 219.
 Schurman on, 221.
 White on, 224.
- term of member of, 120.
 Seaver on, 131.
- Citizenship, intelligent, 67.
 special education in duties of, 63.
- Commissioner, election of, Bardeen on,
 200.
 Barnes on, 201.
 Carlisle on, 204.
 Harper on, 213.
 Hinsdale on, 215.
 Kiehle on, 217.
 Parker on, 218.
 Thwing on, 222.
- power and duty of, Bardeen on, 200.
 Barnes on, 201.
 Carlisle on, 205.
 Harper on, 213.
 Hinsdale on, 216.
 Parker on, 218.
 Thwing on, 222.
- Committee of Fifteen, appointment and
 personnel of, 7, 8.

- Committee of Fifteen, appropriation for expenses of, 8.
 correspondence and discussion of, 8.
 meetings of, 8, 13, 17.
 personnel of sub-committees of, 9.
 propositions adopted by, 14-16.
 publication of report of, 3, 17.
- Compulsory education, Bardeen on, 201.
 Butler on, 203.
 Carlisle on, 205.
 Corson on, 207.
 Gilbert on, 210.
 Hanus on, 213.
 Harper on, 214.
 Hill on, 215.
 Hinsdale on, 217.
 Kiehle on, 218.
 Parker on, 219.
 Pattengill on, 220.
 Schurman on, 222.
 Thwing on, 223.
 White on, 225.
- Content of education, Gilbert on, 104.
- Correlation, of course of study with pupil's environment, 41.
 of results by division, Dutton, Grandgent, Hanus, Hill, Huling, and Kelley on, 178.
- Correlation of studies, by synthesis, Gilbert on, 107.
 division of, Dutton, Grandgent, Hanus, Hill, Huling, and Kelley on, 178.
 Klemm on, 185.
 Prince on, 195.
 effect of faulty, 84, 97.
 forms of, set forth by Gilbert, 104.
 by Jones, 110, 111.
 in elementary education, report of sub-committee on, 40.
 meaning of, 40.
 Gregory on, 170, 171.
 Hanus on, 146.
 Jones on, 181.
 purpose of, Bryant on, 163.
 Dutton, Grandgent, Hanus, Hill, Huling, and Kelley on, 177.
 McMurry on, 186.
 Merwin on, 190.
 Parker on, 195.
 questions by sub-committee on, 10, 11, 157, 158.
 relation of psychology to, 42.
 restriction of, Jones on, 111.
 universality of, Bryant on, 163.
 Dutton, Grandgent, Hanus, Hill, Huling, and Kelley on, 178.
 Klemm on, 184.
- Council, school, 121.
 teachers', 204, 209, 210.
- Course of study, by whom made, Bardeen on, 201.
 Barnes on, 202.
- Course of study, by whom made, Butler on, 203.
 Carlisle on, 205.
 Corson on, 207.
 Gilbert on, 210.
 Hanus on, 212.
 Harper on, 214.
 Hill on, 214.
 Hinsdale on, 217.
 Kiehle on, 218.
 Parker on, 219.
 Pattengill on, 220.
 Schurman on, 222.
 Thwing on, 223.
 White on, 225.
 same for all students, 87.
- Discipline, effect of too much, 49.
- Drawing, importance of, in elementary school work, 69.
 time to be devoted to, 70.
- Elementary course, brief description of, 67.
 length of, Bryant on, 160.
 Dutton, Grandgent, Hanus, Hill, Huling, and Kelley on, 174.
 Gregory on, 165.
 Jesse on, 180.
 Klemm on, 184.
 Merwin on, 186.
 Mowry on, 191.
 Parker on, 194.
 Stearns on, 196.
 Williams on, 196.
- Elementary school, æsthetic training in, 48.
 branches to be studied in, 68.
 disciplinary work of, 67.
 help gained in, from recitations of fellow-pupils, 68.
 manual training in, 71.
 mechanical exercises in, 68.
 moral training in, 72.
 penmanship in, 92.
 physical culture in, 72.
 schedule of lessons per week for, 93.
 study of American Revolution in, 66.
 of Constitution in, 67.
 vocal music in, 71.
- Fractions, Greenwood on teaching of, 99, 100.
- Geography, central idea of, in elementary schools, 60.
 comprehensiveness of meaning of, 59.
 increasing call for wider knowledge of, 61.
 influence of geographical societies on study of, 62.
 physical, 76.
 psychological value of study of, 61.
 sequence of topics for a rational study of, 60.

- Geometry, Gilbert on, 107.
 inventional, 75.
- Grammar, discipline from study of, 48.
 Maxwell on, 112.
 use of paraphrasing in, 90.
 Maxwell on, 112.
 use of text-book in, 92.
 Gilbert on, 108.
 value of, in teaching language, 48.
- Grammar-school course, rank of studies in, Bridgham on, 159.
 Davis on, 104.
 Dutton, Grandgent, Hanus, Hill, Huling, and Kelley on, 178.
 Gregory on, 172.
 Klemm on, 185.
 Parker on, 195.
- Grammar-school studies, range of, Bryant on, 162.
 Dutton, Grandgent, Hanus, Hill, Huling, and Kelley on, 175.
 Gregory on, 168, 169.
 Jesse on, 181.
 Klemm on, 184.
 Merwin on, 188.
 Mowry on, 193.
 Parker on, 194.
 Prince on, 195.
 Stearns on, 196.
 pedagogical value of, Bryant on, 160.
 Dutton, Grandgent, Hanus, Hill, Huling, and Kelley on, 174.
 Gregory on, 168.
 Jones on, 182.
 Klemm on, 184.
 Merwin on, 186.
 Mowry on, 192.
 Parker on, 194.
- History, broadening influence of study of, 26.
 classic period of American, 66.
 examples of heroism in United States, 66.
 general, in secondary course, 81.
 oral lessons on, 67.
 modification of, by variations in chronology, 82.
 reflective powers exercised by, 67.
 spiral course in, 70.
 teaching of, 65.
- History and geography, relative value of, 62.
- Hobbes, importance attached to the State by, 63.
- Home study, disadvantages of, 86.
- Hygiene, lessons in, included in natural science, 71.
- Instruction, according to length of school life, Klemm on, 185.
 Merwin on, 191.
 Parker on, 195.
 Williams on, 197.
- Instruction, demands for scientific and professional, 123.
 influence of civilization on, 14, 42.
 influence of environment on, 14.
 influence of length of school life on, Bryant on, 163.
 Gregory on, 173.
 Jones on, 183.
- Jacotot's maxim, 96.
- Language, a product of the experience of people, 49.
 all learning dependent on, 44.
 development by, Gilbert on, 106.
 every lesson an exercise in, 91.
 influence of art and literature on study of, 48.
 Maxwell on study of foreign, 113.
 place of, in elementary school, 46.
 value of original composition in study of, 90.
- Language and thinking, Jones on, 111.
- Latin, substitution of, for grammar, 73, 95.
- Literature, æsthetic training by, 48.
 civilizing influence of higher, 47.
 correlation of, with physical facts, Jones on, 112.
 ethics and æsthetics in, 50, 51.
 knowledge of human nature through, 47.
 selections for study of, 47.
- Manual training, amount of time to be devoted to, 71.
 Gilbert on, 106.
- Mathematics, rank of, among studies, 52.
 tendency of exclusive devotion to, 49.
- Methods of teaching, Bryant on, 163.
 Parker on, 195.
- Model school, Hanus on, 148.
 teachers in, Barnes on, 138.
 Bliss on, 138.
 Boyden on, 139.
 Hinsdale on, 150.
 Hyde on, 152.
 Martin on, 153.
 Parker on, 154.
- Model-teacher, criticism of, Barnes on, 138.
 Hinsdale on, 150.
 Parker on, 155.
- Natural philosophy, Christianizing influence of, 78.
- Natural science, acquisition of, by results, 81.
 in the elementary school, 69.
 suggestions for the teaching of, 70.
 time for oral lessons in, 70.
- Objective teaching as a specialty, 50.
- Oral lessons, argument in favor of weekly, 71.
 Gilbert's dissent from opinion of committee on, 108.

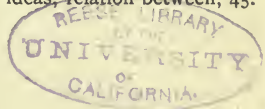
- Organization of city school systems,
 questions by sub-committee
 on, 12, 198.
 report of sub-committee on, 114.
- Parent and teacher, disputes between,
 Barnes on, 202.
 Butler on, 203.
 Corson on, 207.
 Gilbert on, 210.
 Hanus on, 212.
 Harper on, 214.
 Hill on, 214.
 Hinsdale on, 217.
 Kiehle on, 218.
 Parker on, 219.
 Pattengill on, 220.
 Schurman on, 222.
 Thwing on, 223.
 White on, 225.
- Physics, adaptation of, to high-school
 course, 76.
- Physiology, lessons in, to be included
 in natural science, 71.
- Processes becoming mechanical to be
 avoided, 57.
- Programme, assignment of time in, 172.
 Davis on, 164.
 Dutton, Grandgent, Hanus, Hill,
 Huling, and Kelley on, 178.
 Merwin on, 190.
 relief studies on, 87.
- Promotion, Bardeen on, 201.
 Barnes on, 202.
 Bridgham on, 160.
 Bryant on, 163.
 Butler on, 203.
 Carlisle on, 205.
 Corson on, 207.
 Eliot on, 209.
 Gilbert on, 210.
 Gregory on, 173.
 Hanus on, 212.
 Harper on, 214.
 Hill on, 214.
 Hinsdale on, 217.
 Jones on, 183.
 Kiehle on, 218.
 Klemm on, 186.
 Merwin on, 191.
 Mowry on, 194.
 Parker on, 195, 219.
 Pattengill on, 220.
 Schurman on, 222.
 Stearns on, 196.
 Thwing on, 223.
 White on, 225.
 Williams on, 197.
- by competitive examination, Bar-
 deen on, 200.
 Barnes on, 202.
 Butler on, 203.
 Carlisle on, 205.
 Corson on, 206.
- Promotion, by competitive examination,
 Gilbert on, 210.
 Hanus on, 212.
 Harper on, 213.
 Hill on, 214.
 Hinsdale on, 216.
 Kiehle on, 218.
 Parker on, 219.
 Pattengill on, 220.
 Schurman on, 222.
 Thwing on, 223.
 White on, 225.
- device for improvement in, 98.
- Psychology, function of, in education,
 14, 25, 42.
 scientific experiment in physiologi-
 cal, 43.
- Pupil-teacher, criticism of, Greenwood
 on, 142.
 Gregory on, 144.
 Hinsdale on, 151.
 Holloway on, 152.
 Parker on, 155.
 critics for, Hinsdale on, 151.
 Parker on, 155.
 testing of, Hinsdale on, 151.
 Johnston on, 156.
 Parker on, 155.
 Scott on, 156.
- Reading, plan for, 89.
 undesirability of use of, for other
 exercises, 84.
- Recitation, attention in, 96.
 length of, 93.
 Bryant on, 163.
 Bridgham on, 159.
 Dutton, Grandgent, Hanus, Hill,
 Huling, and Kelley on, 178.
 Gregory on, 172.
 Klemm on, 185.
 Mowry on, 194.
 Parker on, 195.
 Williams on, 196.
 studies for morning, 86.
- Republic, true Roman meaning of, 64.
- School administration, board for legis-
 lative functions of, 128.
 Lane on, 132.
 by committees, 124.
 executive of business department
 of, 128.
 Lane on, 132.
 executive of department of instruc-
 tion of, 128.
 legislative body for, 118.
 legislative and executive functions
 of, discrimination between,
 116, 128, 130.
 rights of parents in, 129.
- School buildings, exclusiveness in use
 of, 98.
 and supplies, care of, 204, 209.
- School director, 121.

School director, Seaver on, 131.
 School system, affected by public sentiment, 114, 117.
 authority of the people over, 117.
 dissociation of, from politics or religion, 119, 120, 128.
 distinctive features of good, 98.
 Science, definition of, 69.
 educational value of, 80.
 method of teaching, 79.
 Gilbert on, 107.
 study of, to be on the line of experience, 69.
 two divisions of natural, 70.
 Science and history contrasted, 83.
 Secondary and elementary work, requirements for, 139, 141.
 Secondary school, province of, 34.
 Self-education, tendency of, 78.
 Specialization of work, 80, 95.
 Bryant on, 163.
 Dutton, Grandgent, Hanus, Hill, Huling, and Kelley on, 180.
 Gilbert on, 89.
 Jones on, 183.
 Parker on, 195.
 Williams on, 197.
 Spelling, 92.
 Greenwood on, 104.
 Studies, order of, psychological, 74.
 symmetrical adjustment of, 40.
 Study, advanced and elementary, relative value of, 88.
 professional and academic, contrasted, 22.
 Style, how to acquire a correct, 48, 91.
 Superintendent, appointment of, Bardeen on, 200.
 Barnes on, 201.
 Butler on, 202.
 Carlisle on, 205.
 Corson on, 206.
 Gilbert on, 210.
 Hanus on, 212.
 Harper on, 213.
 Hill on, 214.
 Hinsdale on, 216.
 Kiehle on, 217.
 Parker on, 218.
 Pattengill on, 220.
 Schurman on, 221.
 Thwing on, 222.
 White on, 224.
 assistants for, 126.
 authority of State over, Bardeen on, 200.
 powers of, 123, 125.
 Seaver on, 132.
 qualifications for, Bardeen on, 200.
 Barnes on, 201.
 Butler on, 203.
 Carlisle on, 205.
 Corson on, 206.

Superintendent, qualifications for. Gilbert on, 210.
 Hanus on, 212.
 Harper on, 213.
 Hill on, 214.
 Hinsdale on, 216.
 Kiehle on, 217.
 Parker on, 218.
 Pattengill on, 220.
 Schurman on, 221.
 Thwing on, 222.
 White on, 224.
 responsibility of, to State authority, Barnes on, 201.
 Carlisle on, 205.
 Corson on, 206.
 Hanus on, 212.
 Harper on, 213.
 Hill on, 214.
 Hinsdale on, 216.
 Parker on, 219.
 Pattengill on, 220.
 Schurman on, 221.
 Thwing on, 222.
 White on, 224.
 term of office of, 125.
 Seaver on, 132.
 Superintendent and teacher, relative duties of, Bardeen on, 200.
 Barnes on, 202.
 Carlisle on, 205.
 Corson on, 206.
 Gilbert on, 210.
 Hanus on, 212.
 Harper on, 214.
 Hill on, 214.
 Hinsdale on, 217.
 Parker on, 219.
 Pattengill on, 220.
 Schurman on, 222.
 Thwing on, 223.
 White on, 225.
 Teacher, appointment and discharge of, Bardeen on, 200.
 Butler on, 203.
 Carlisle on, 205.
 Corson on, 206.
 Eliot on, 208.
 Gilbert on, 210.
 Hanus on, 212.
 Harper on, 213.
 Hill on, 214.
 Hinsdale on, 216.
 Kiehle on, 218.
 Parker on, 219.
 Pattengill on, 220.
 Schurman on, 221.
 Seaver on, 132.
 Thwing on, 223.
 White on, 225.
 child's need of guidance of, 79.
 grade assignment of, Bardeen on, 200.

- Teacher, grade assignment of, Barnes on, 201.
 Carlisle on, 205.
 Corson on, 206.
 Gilbert on, 210.
 Hanus on, 212.
 Harper on, 213.
 Hill on, 214.
 Hinsdale on, 216.
 Kiehle on, 218.
 Parker on, 219.
 Pattengill on, 220.
 Schurman on, 222.
 Thwing on, 223.
 White on, 225.
 graduation of, 33.
 kinds of, in training school, 20.
 licensing of, Bardeen on, 200.
 Barnes on, 201.
 Carlisle on, 205.
 Corson on, 206.
 Gilbert on, 210.
 Hanus on, 212.
 Harper on, 213.
 Hill on, 214.
 Hinsdale on, 216.
 Parker on, 219.
 Pattengill on, 220.
 Schurman on, 221.
 Thwing on, 222.
 White on, 224.
 minimum acquirements for, 19, 20.
 position of, on eligible list, 126.
 preparation of normal-school, 35.
 preparation of secondary, Boone on, 140, 141.
 Hanus on, 145-148.
 status of, in schoolroom, 127.
 tests of success of, 32.
- Teaching, art of, 22, 37.
 how to secure progress in methods of, 46.
 requisite elements of, 33.
 science of, 22, 36.
- Text-books, selection of, Bardeen on, 201.
 Butler on, 203.
 Carlisle on, 205.
 Corson on, 207.
 Eliot on, 209.
 Gilbert on, 210.
 Hanus on, 212.
 Harper on, 214.
 Hill on, 214.
 Hinsdale on, 217.
 Kiehle on, 218.
 Parker on, 219.
 Pattengill on, 220.
 Schurman on, 222.
 Thwing on, 223.
 White on, 225.
- Theory, Hanus on educational, 145, 146.
- Time, division of, for subjects, Davis on, 164.
 Time, division of, for subjects, Dutton, Grandgent, Hanus, Hill, Huling, and Kelley on, 179.
 Klemm on, 185.
 for each branch, recommendation regarding, 89-95.
- Topics, division of, Davis on, 165.
 Merwin on, 191.
 practical basis in choice of, 41.
 psychological arrangement of, 41.
 sequence of, 40.
 Bryant on, 162.
 Dutton, Grandgent, Hanus, Hill, Huling, and Kelley on, 176.
 Gregory on, 169.
 Jones on, 183.
 Merwin on, 189.
 Parker on, 195.
- Training of teachers, necessity and provision for, 149.
 one-sidedness of an abstract psychological, 42.
 questions by sub-committee on, 9, 10, 135, 136.
 study of school economy in, 26, 37.
- Training school, age for admission to, Gregory on, 143.
 Hinsdale on, 149.
 Parker on, 153.
- apportionment of time in, 23.
 Gault on, 141.
 Greenwood on, 142.
 Gregory on, 143.
 Hinsdale on, 150.
 Holloway on, 152.
 Parker on, 154.
- diploma of, Hinsdale on, 151.
 Parker on, 155.
- examination for, Hinsdale on, 150.
 Hyde on, 152.
 Parker on, 154.
- history of education in, 27.
 Barnes on, 137.
 Bliss on, 138.
 Gregory on, 144.
 Hanus on, 146.
 Hinsdale on, 150.
 Murdock on, 153.
 Parker on, 154.
- how conducted, 27-30.
 length of course in, 30-32.
 Hinsdale on, 150.
 Holloway on, 152.
 Parker on, 154.
- measurement of child in, Barnes on, 137.
- mode of training in, Barnes on, 137.
 Bliss on, 138.
 Boyden on, 139.
 Gault on, 142.
 Greenwood on, 142.
 Hanus on, 148.
 Hinsdale on, 150.

- Training school, mode of training in,
 Johnston on, 155.
 Scott on, 155.
 observation of child in, 24.
 Barnes on, 137.
 Greenwood on, 142.
 Hinsdale on, 150.
 Holloway on, 152.
 Johnston on, 155.
 Martin on, 153.
 Parker on, 154.
 Scott on, 155.
 post-graduate year in, 38.
 principles of education in, Gault on,
 141.
 Hinsdale on, 150.
 Johnston on, 155.
 Parker on, 154.
 Scott on, 155.
 psychology in, 23, 24.
 Bliss on, 138.
 Greenwood on, 142.
 Gregory on, 144.
 Hanus on, 145.
 Hinsdale on, 150.
- Training school, psychology in, Hyde
 on, 152.
 Murdock on, 153.
 Parker on, 154.
 scholarship requirements for, Bliss
 on, 138.
 Hanus on, 144, 145.
 Hinsdale on, 150.
 Johnston on, 155.
 Parker on, 153.
 Scott on, 155.
 school economy in, 26.
 scope of work in, Hinsdale on,
 151.
 Parker on, 155.
 studies in, 21.
 United States Constitution, study of,
 66, 67.
 Unity of knowledge not outside a child's
 capacity, Gilbert on, 105.
 Vocabulary, familiarity with a colloquial,
 46.
 Words, internal side of, 46.
 rise of, through actual experience, 45.
 Words and ideas, relation between, 45.



V8B



UNIVERSITY OF CALIFORNIA LIBRARY
BERKELEY

Return to desk from which borrowed.
This book is DUE on the last date stamped below.

21 Dec '49 JA

17 Jan 1950

6 Jul 50 AN

~~28 Aug 50 BS~~

YC 87585

64989

LB 1555

N2

UNIVERSITY OF CALIFORNIA LIBRARY

