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Association

The Department of Superintendence of the National Education
Association

The Department of Normal Schools of the National Education
Association

The National Society for the Study of Education

The Society of College Teachers of Education

The National Committee on Agricultural Education

ABSTRACTS PREPARED BY

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CURRENT EDUCATIONAL TOPICS.

NATIONAL COUNCIL OF EDUCATION, NATIONAL EDUCATION ASSOCIATION.

ECONOMY OF TIME IN EDUCATION.

I.—By JAMES H. BAKER.

President of University of Colorado.

It is important to remember that this is not a question of "shortening the college course"; that phrase does not give the significance of the inquiry, which is upon the length of the whole period of general education. We do not advocate lowering the standard of American education, or cramming and hurry, or lessening the period for those who early turn to vocations. It is the aim rather to strengthen scholarship, to educate without worry or waste, to keep a class of pupils in school longer than is done under present conditions. We believe that by a more economic use of material and methods two years at least can be saved in the whole period of education, including the college, and better results secured than now.

II.—By JAMES M. GREEN.

Principal of State Normal School, Trenton, N. J.

How can we discuss intelligently economy of time unless we define a specific thing to be accomplished and the length of time it takes to accomplish it under given circumstances?

The term education is too general; it means too much. It seems to me that it would be better to discuss economy in terms of the curriculum; for instance, what of geometry or physics, general and special, should we teach in the schools, and how much time will each require?

Every principal knows how large are the claims of each specialist for his department. The teacher of penmanship wants to secure not only good letter forms, but the relation of good penmanship to the development of good English; the teacher of English wants not only to secure good forms of expression, but wants to review all causes

of expression. He is unwilling to recognize the fact that the correct expression of a problem in physics is an exercise in English. Indeed, each specialist is disposed to charge himself with the whole of education rather than confine himself to that which is peculiar to his subject. In this way we merge and overlap very much in our efforts. Whether we do our Latin in the college or university does not seem so important as how much Latin should we do and how best do it: We need to distinguish between essentials and incidentals.

ECONOMY OF TIME IN ELEMENTARY EDUCATION.

JAMES H. VAN SICKLE,

Superintendent of Schools, Springfield, Mass.

One of the conspicuous causes of waste in elementary education is the attempt to give the same preparation to all, regardless of wide differences in aptitude and the character of the life to be led. Classifying the grades above the sixth as secondary would facilitate differentiation in the upper grades, thus permitting all pupils to make more direct preparation for business or the industries or professional life than is now possible.

We are assuming that it is possible and desirable to end the college and begin the university at 20 instead of 22, thus saving two years during the whole period of education. We readily admit the responsibility of the elementary school for a share of this saving, but in accepting 20 as the age at which the college course should be completed, we have in mind the abler students, not all students.

We can not go far until we can agree upon the essentials of a course of study and common standards of measurement, for economy of time in education must be relative to the results which we wish to secure.

If determining the essentials of a course of study and adopting measures of accomplishment, there is danger that too narrow a definition of "essentials" will be adopted. Fixed knowledge of fundamental processes is no more and no less essential than mental attitude, habits of thought and emotion, and working ideals. Something more than drill is needed to get these ingrained. The selection of suitable subject matter for work and study in the grades; the organization of this material with reference to the periods when important instincts, interests, powers, and capacities become prominent; the development of desirable ideals, motives, and habits in the pupils—these things must be considered when we undertake to say what are the "essentials."

Recent studies in retardation have involved the fallacy that the proper place of a child in school can be determined by age alone. What is needed to put education on a scientific basis is an examination of each child's physical state and mental power at the beginning of school life, on the results of which all the work should be based.

In considering waste in education, no problem looms larger than the preliminary and after training of suitable principals. Given a salary that will enable the superintendent to select persons of tested strength and character for these positions, no effort is expended to better advantage in checking waste than that which the superintendent devotes to conferences with his principals. The principal can either make or mar the most carefully planned scheme, and in his hands rests the success or failure of any plans that may be formulated for economizing time in elementary education.

HIGH-SCHOOL PREPARATION OF CANDIDATES FOR NORMAL SCHOOLS.

I.—By DAVID FELMLEY,*

President of State Normal University, Normal, Ill.

It appears that throughout the country normal school faculties are generally not satisfied with the quality of the high school preparation received by normal-school students. The character of the instruction is almost everywhere dominated by college traditions and ideals. Hence it appears that the fundamental cause of the defective preparation of our students is in the conscious aim of the high school.

This conscious aim of the high school determines the choice of teachers. If the one function of the high school is to fit for college, what more sensible than to secure as teachers men and women who have been through college and know what preparation will be needed? In this way the circle is closed and the intrusion of foreign elements effectually prevented.

Another evil result of this ideal is a tendency in the organization of the high school to depreciate all student activities that do not directly fit for college.

The first need of the high school is a change of aim. It must front the actual needs of life as found in shop and store, in farm and home. This does not mean that all instruction shall be vocational; the physical, social, and cultural needs of men and women are facts of life. But it does mean that we must assess the actual educational value of every study in the curriculum, of every detail of organization and method, and conduct our schools in such a way as to secure the maximum of useful knowledge, skill, power, appreciation, and character. To make such an assessment of values is no easy matter. We lack a universally accepted standard. We are likely to be misled

by prejudice, by habit, by traditional doctrines of formal discipline, intangible and unprovable.

Then our organization must be in close articulation with the total environment of the student. Thus, if the high school does not offer instruction in instrumental music, it must find a way to supervise and credit private instruction and count it for graduation. If the student of domestic science has regular home duties in this field for which the school instruction affords direction, some means should be found for rating the excellence of the performance and crediting the same in the high school. The school must not set itself up as the one institution that shall bend everything else to its calendar and needs.

Such a change of conscious aim is not easy to bring to pass, for the university looms large above the horizon of the country town.

The second need of the high school is a change in the curriculum—not merely in the interests of future teachers but of all the students. The question arises, Do high-school students decide to become teachers early enough to affect their choice of studies? The general opinion is that they do not, but I am not sure that this opinion is in many cases based on actual investigation. In one large normal school 23 of the 26 women of the faculty had decided to become teachers before they were 16. A majority of the students in the same institution had decided at that age. In another State normal school all the high-school graduates were polled with this result:

- 37 per cent decided to become teachers before entering the high school.
- 4 per cent during their first year.
- 4 per cent during their second year.
- 14 per cent during their third year.
- 22 per cent during their senior year.
- 19 per cent after graduation.

From this it appears that by the middle of the high-school course enough students have chosen to become teachers to make it worth while to offer any needed courses.

From the reports received it appears that the high-school curriculum throughout the country contains substantially the same elements, but varies somewhat in the relative time devoted to the different branches of study. The standard graduation requirements are usually 16 units, each unit being a year's work in a subject with daily recitations. An approximate composite of the various programs actually completed by the high-school graduates in the normal schools reporting is as follows:

	Units.
<i>English</i> , including grammar, rhetoric and composition, English literature, reading, and public speaking.....	3.8
<i>Foreign Languages</i> —Latin, Greek, German, French, and Spanish.....	3.4
<i>Social Science</i> —History, economics, civil government.....	2.6
<i>Mathematics</i> —Algebra, geometry, trigonometry, and arithmetic.....	2.0
<i>Physical Science</i> —Physics and chemistry.....	1.2

	Units.
<i>Biological Science</i> —Zoology, botany, and human physiology.....	8
<i>Earth Science</i> —Geography, physiography, geology, and astronomy.....	6
<i>Music</i> —Vocal or instrumental.....	2
<i>Drawing</i> —Design, manual training.....	3
<i>Agriculture and Household Science</i>	1

In the East foreign language has a larger place, often constituting a full third of the curriculum. In the South the ancient languages and mathematics receive largest relative attention. In the Middle West and also in the Mountain and Pacific States larger attention is paid to the biological sciences. Drawing and design seem best developed in New England; agriculture and the household arts are just beginning to appear in ratable amount in the high-school curriculum of a few students.

The normal-school faculties reporting are pretty well agreed that for future elementary teachers there should be less foreign language, less algebra and geometry, more arithmetic, more biological science, more geography, more of drawing and the other manual arts, more music, reading, and public speaking than we ordinarily find in the high-school course. Our students before completing the normal-school program are usually of the same opinion.

The following course is suggested: Three years' work in English, four in science, two in mathematics, two in history and civics, two in German or French, two in industrial lines, one in music and drawing. The third need of the high school from the standpoint of the normal school is that the instruction in the various branches be more thorough and more vital. The fundamental difficulty seems to be that the high-school study is largely a thing apart from daily life experience.

The sciences should be so taught that the student will feel every day that his health, his happiness, and his success in life depend upon the truths they contain. They should explain natural phenomena and industrial processes, fuels, foods, sanitation, and the rules of right living.

The mathematics of the high school needs thorough revision. No other branch is so universally studied as algebra and with so little profit. The time devoted to it should be reduced to one year, its topics limited to those that generalize and extend arithmetical processes. A year of plane geometry, with many practical arithmetical problems involving geometrical elements, should suffice in this branch.

History should undertake to answer this question: How did our present institutions come to be as they are? Only in so far as they answer this are events or the lives of men worth knowing. Civics is a study of rights and duties in society. It deals with the cooperative efforts of men in the State to secure justice, protection, healthful conditions, education, and sundry other things of everyday value.

It should emphasize function rather than structure and machinery. No study in the curriculum is of higher value than economics. Without it the organization of modern industry can not be understood or rightly adjusted. But to be of value it must be taught in terms of the student's environment.

Where the normal-school course is only two years in length, it is best in the high school to omit foreign language altogether and include in the last two years a study of the common branches—not a review in the sense of going over grammar-school textbooks, but a fresh study of these subjects from a higher standpoint, a study that will enlist the best energies of advanced students. A year of physical and commercial geography will set forth the conditions and purpose of human industry. Grammar is rarely appreciated by the 14-year-old. It really belongs in the senior year of the high school.

The fourth need of the high school is a different standard of preparation for its teachers. Our students usually come from the smaller high schools, where salaries are low. Most of the teachers there are young women recently graduated from college. Few of them have had any professional training of any sort. Those who are successful remain but a short time. Consequently our high schools are taught by a shifting corps of young, inexperienced, and untrained teachers. All high-school teachers need as thorough professional preparation as elementary-school teachers.

We therefore hold that in selecting high-school teachers school authorities should give due weight to professional education and training as well as to character and scholarship, and that teachers of extended experience, acknowledged skill, and ample scholarship gained through private study should not be excluded from the high school because of the lack of a degree.

Although this report has set forth what your committee believes to be certain shortcomings of many high schools, it must not be inferred that we hold the high school chiefly responsible for poor work done by graduates of normal schools. These institutions need to examine their own organization, curricula, faculty, and methods.

II.—By J. H. PHILLIPS,

Superintendent of Schools, Birmingham, Ala.

The chief function of the high school in our educational system is to provide such facilities as shall enable the pupil to discover himself.

The graduates of normal schools who become teachers in our elementary schools may be readily divided into two groups: First, those who have graduated from a good high school prior to their entrance upon a professional course in a normal school, and, second, those who have received both their academic and professional training in the

normal schools. It seems to me that a comparison of these two groups in practical school work may be helpful; it will enable us by observation and experiment to ascertain the results of high-school training when that training is controlled by the normal-school-ideal, and to compare these results with those of the regular high-school course conducted without specific regard for the normal school.

The danger incurred by the special preparation for the normal school in the high school is twofold: It necessitates the selection of a vocation and consequent differentiation in work at too early a stage, before the pupil has had adequate opportunity for self-discovery; it further tends to narrow the academic work of the pupil to those studies deemed of practical use in the vocation selected. These objections apply equally to special preparation for the law school, or any other type of school requiring scholarship and culture as a basis for technical and professional training.

III.—By HOMER H. SEERLEY,

President Iowa State Teachers' College, Cedar Falls, Iowa.

The students in the normal preparatory courses may be lacking in social culture and acquaintance with the world, but they are commonly more mature in age and more willing to conform to demands, they are more ambitious to attain accuracy and full mastery, and they are influenced more by the occupational spirit than are the young students from the high schools who have been making school-going their occupation and have become inured to the tedium and the fatigue that continuous work produces.

It is enough to say that it is not so much a different teaching and training that is wanted in the high school as it is a different measurement of accomplishment and a different treatment and management upon the part of the normal-school professors. There is much room for readjustment, for review of principles, for reconsideration of things that are fundamental, for sympathy with incompleteness and imperfection, as all these conditions will be found in the average high-school graduate. In fact, the wonder is that, in the change of environment which comes from the new standpoint and from the modification of object and purpose, the high-school graduate succeeds as well as he does when undertaking the class work and the organized plans of the average normal school.

Then there is another supreme difficulty when viewed from the nation-wide standpoint. Normal schools can not be standardized as educational institutions, because they are provincial and statutory in their status and in their scope of endeavor.

IV.—By CHARLES S. CHAPIN,

Principal of State Normal School, Montclair, N. J.

I disagree with Dr. Felmley's report *in toto*. He has two main propositions, neither of which applies to normal-school conditions in the East.

1. He seems to me to disparage scholarship, or, at least, to draw too sharp a distinction between the scholar and the teacher. The standing reproach on normal schools has been and is the lack of scholarly attainments of the members of their faculties. The conflict between scholarship and teaching ability is largely fictitious and artificial, and it does not become us of the normal schools to allow this report to place us in a false position on so vital a matter as scholarship.

2. The report calls for *special* high-school preparation for admission to the normal schools. We need no such special course as this report calls for. Such a course will give pupils poorer preparation than they are getting now.

3. I dissent also from the idea expressed in the report that the normal school shall dictate the course of study in the high school. We of the normal schools are self-governing, taking our orders from no higher institution. It is not only just, but it is very good policy to respect the autonomy of the high schools.

HIGH-SCHOOL PREPARATION OF NORMAL-SCHOOL CANDIDATES, FROM THE HIGH-SCHOOL POINT OF VIEW.

J. STANLEY BROWN,

Principal of Township High School, Joliet, Ill.

It is my judgment that it is both unfair and unwise for either the normal school or the college to dictate to the high school what subjects shall appear in the course of study, what place they shall have in the course of study, or in what quantity they shall appear.

I believe the high school ought to be as largely autonomous as the elementary school or as any other school, and that its supreme purpose ought to be, and in a large measure is, the interpretation of life in terms of the community's highest need:

I do not believe that the higher institutions of learning are to-day in any considerable degree dictating either the course of study or the supply of the teachers to the high school. What is true in this respect to-day was not true 10 years ago.

The growth of the modern high school, its place in the community, and its importance as an institution in itself have given it such a

unique place in education that it ill becomes any other educational institution to interfere with it, to hedge it roundabout, or to make inroads upon its field of activity.

I see no good reason why the relation existing between the elementary school and the high school should not also exist between the high school and any other institution doing work beyond it.

The function of any public high school is to interpret life in terms of the needs of the local community, whose it is, by whom it came into being, and for whose supreme service it exists. It therefore can not change its aim in order to satisfy the wishes of any other institution.

HEALTH PROBLEMS IN EDUCATION.

THOMAS D. WOOD, M. D.

Professor of Physical Education, Teachers' College, Columbia University.

The most important of all our national resources is the health of the people. The most valuable asset in our capital of national vitality is the health of the children.

Public education is the logical, the strategic, and the responsible agency of the Nation, of each State, and of each community for the conservation and enhancement of child health.

To become an effective instrument for the protection and promotion of child health, it is essential that the school should not only be a sanitary, healthful place for children, but that the various agencies in public education should be so organized that each pupil may be given the best possible opportunity to escape weakness and disease and far more to realize the attainable best in growth, in development of biologic, intellectual, moral, social, and economic power.

It can not be taken for granted that school children are healthy. The majority of them are not as healthy as they should or may be.

There are in the schools of the United States to-day approximately 20,000,000 pupils. Careful study of statistics and estimation of all conditions leads to the following personal conclusions:

(a) From 1½ to 2 per cent, or 400,000, of these have organic heart disease.

(b) Probably 5 per cent, 1,000,000 at least, have now or have had tuberculous disease of the lungs.

(c) About 5 per cent, or 1,000,000, have spinal curvature, flat foot, or some other moderate deformity serious enough to interfere to some degree with health.

(d) Over 5 per cent, or 1,000,000, have defective hearing.

(e) About 25 per cent, or 5,000,000, have defective vision.

(f) About 25 per cent, or 5,000,000, are suffering from malnutrition, in many cases due in part at least to one or more of the other defects enumerated.

(g) Over 30 per cent, or 6,000,000, have enlarged tonsils, adenoids, or enlarged cervical glands which need attention.

(h) Over 50 per cent, or 10,000,000 (in some schools as high as 98 per cent), have defective teeth which are interfering with health.

Several millions of the children possess, each, two or more of the handicapping defects.

(i) About 75 per cent, or 15,000,000, of the school children in this country need attention to-day for physical defects which are prejudicial to health and which are partially or completely remediable.

About 100 cities in the United States have as many different kinds of organizations for the care of health in the schools.

We need more definite and uniform standards of work in this field.

We need more convincing demonstration of the value of various methods employed for the promotion of child health, so that sufficient money may be appropriated for school hygiene by those who control public funds. School hygiene includes much more than health examinations for contagious disease and chronic physical defects, although such examinations make the basis for all individual care and adjustment.

Other factors of essential importance in the health field are the following:

(a) Maintenance of sanitary, healthful school environment, with clean schoolhouses, abundant light, good air, etc.

(b) Hygienic instruction and school management, with particular attention to influence of teacher upon nervous health of pupils.

(c) Effective teaching of health and hygiene to all pupils in the schools.

(d) Rational supervision and direction of play, games, athletics, and all healthful and satisfying forms of physical education.

Special features in the schools, or closely related to the schools, which have direct bearing on health include the following: (a) Homes of the pupils; (b) playgrounds and gymnasium; (c) dental clinics and other medical clinics for children; (d) classes for defectives and cripples; (e) open-air schools.

Improvement in school hygiene involves prominently these factors:

1. Recognition of extraordinary value of work of school nurses and employment of nurses in the schools.

2. More comprehensive and thorough training in school hygiene in all normal schools and other institutions for professional education of teachers.

3. Better technical training for school physicians, school nurses, teachers of hygiene and physical education, and other special officers in this field.

4. Requirements of tests of knowledge and skill in various phases of school hygiene for teachers in general and certification of hygiene specialists of different types.

SECURING PUBLIC SUPPORT FOR HEALTH WORK IN SCHOOLS.

WILLIAM H. ALLEN,

Director of National Training School for Public Service, New York.

More kinds of work, more work of a kind, and more money for its work is a slogan for the United States Bureau of Education which should be popularized. To back it up with letters to Congressmen and Senators is the most important step which can be taken in 1912 toward educating communities to support health work for their own school children.

Comprehensive, efficient, aggressive service should and could be given by existing agencies to all school children under the Stars and Stripes. To support the United States Bureau of Education, which is in touch with one-half million school-teachers and twenty million school pupils, and to interest the general public in supporting that bureau's requests for more money to do more work are concrete responsibilities of the National Council of Education and school superintendents.

Every community has the right "to be shown" before it spends money on school health. It is vastly more important that the community outside of school should understand the need for health work at school than that this health work be done. It is worse to have obstructions to ventilation in a school building than to have obstructions to breathing in a child's throat. Better to have myopia in the eyes of 20 per cent of school children than to have myopic public sentiment regarding the schools' duty to discover each child's physical need and to guarantee each child a physical environment while at school conducive to health. Any community which thinks "sweating" school children in ill-ventilated, insanitary, overcrowded school-rooms is more respectable and more safe than sweating similar children in factories and cranberry bogs is not likely to support school health work.

No public expenditure makes a stronger appeal to the imagination, conscience, and pocketbook of a general public than expenditure for school health. The public should not be expected to come to the school to get its information. The school should be giving out information to the public every week in the year.

The health needs of 100 per cent of a city's school children should be explained to the public. Therefore a health program of work and of education should include private schools.

Education of the public should be by means of charts, uniform sanitary surveys, photographs, "before-and-after" contrasts, exhibits, moving pictures, house-to-house explanation, circulars of instruction, newspaper stories, special emphasis at budget time, and reporting methods which guarantee the efficient use of money allowed.

STATUS OF THE COUNTRY SCHOOL.

E. T. FAIRCHILD.

State Superintendent of Public Instruction, Kansas.

The rural school is the one laggard in the educational procession. Not only has it failed to keep step in the march of educational progress, but there are those who declare that, taken as a whole, it is less efficient than it was 25 years ago. - Many reasons may be advanced for this lack of development. However, no study of the situation will be complete that does not recognize as a definite factor the great change that has taken place in community and social conditions. The ever-increasing trend of rural population toward the cities, and the growing per cent of tenant farmers, have had a distinct and deterrent effect upon our country schools.

The educational thought of our age has been directed toward the improvement of the city school system, of the high school, the efficiency of college, normal school, and university. And the emphasis of our thought has been placed long and devotedly on these educational agencies at the expense of our rural schools. We rejoice in the great things that have been done for higher education, but submit that the time has now come when the same generous support and the same ardent labor should be devoted to the improvement of the rural schools. Although they serve directly the interests of the greatest per cent of our population, and though they are admittedly the most inefficient part of our educational system, yet they are utterly lacking that generous and unselfish support so freely given for the advancement of the high schools and colleges.

The following is a true, though not a full indictment. Of the 12,000,000 rural school children, constituting a clear majority of the whole number of the youth of school age, less than 25 per cent are completing the work of the grades. The teaching body is immature and lacks proper training. Terms are short. School buildings are poor, insanitary, and ill equipped. The school enrollment is constantly decreasing. The supervision is wholly inadequate. Cost of instruction is higher than in the grades. High-school privileges are denied the great majority of these boys and girls. The strong, virile, rural school of a generation ago has gone, and in its place is a primary school weak in numbers and lacking in efficiency. The country boy

and girl of this strenuous and complex twentieth century are not afforded equal educational opportunities.

A vital weakness in our rural school system is the lack of a genuine demand for properly trained teachers. I have knowledge of one State that bears an excellent reputation educationally where, out of 8,000 rural-school teachers in 1910, 4,400 were found to have had no training beyond the eighth grade. The most constant and most imperative requisite of any plan of school instruction is an adequate supply of competent teachers. No other provisions, however ample, can be substituted successfully for capacity in this respect, nor compensate for the want of it. Not liberal appropriations, nor costly buildings, nor well-framed theories, but instruction that executes the purpose of all these and touches the mind of the scholar and imprints thereon its own character and qualities is the demand that must be met, and yet it is just at this point that our common schools, particularly our country schools, exhibit their greatest weakness.

It is a well-known fact that a large majority of the rural teachers go into the work with little or no special preparation. Notwithstanding the multiplication of normal schools, it is rarely that a graduate of these institutions is to be found engaged in teaching in the country. It is a striking anomaly that the lawyer who looks after our material interests, or the physician who cares for our bodily health, even the veterinary who doctors our horses and dogs, the carpenter who builds our houses, or the machinist who repairs our automobiles, must go through a long professional training or practical apprenticeship before he is regarded as fit to ply his trade. Yet, every year thousands of inexperienced and untrained boys and girls are allowed—even encouraged—to step out of the ranks of the common schools and to take their places as the counselors and guides of the plastic minds and immortal souls of our dearest possessions—our children.

This condition falls with greatest severity upon our rural population, for the school boards in all our cities and in most of our smaller towns have firmly established the rule not to employ a teacher who has not had practical teaching experience or special professional training. So, the only place where the untrained tyro, with no education beyond that furnished by the eighth grade, may begin is some country school. But the beginners must teach and the schools must have teachers. As a consequence, our rural schools become the only training school that the vast body of our teachers ever know, and here these teachers learn—by experience and experiment, by practicing upon the tender intellects of the most hopeful and virile youth of the land—those pedagogical principles and educational truths which they should have learned as a part of

their preliminary professional training before ever entering the schoolroom "as one having authority."

No sooner has one of these journeymen or rather journeywomen teachers by virtue of quick insight and ready acquisition—by reason of the born teacher's birthright—grasped the fundamentals of her great problem and proved herself capable in the application of them than the superior inducements of the graded school and the ever-alert city school board allure her from the country to the town. And the rural school must begin over again the training of another teacher to go the same way; or, it may be, this time to experiment with one who was intended to have been a hewer of wood and a drawer of water instead of a teacher of men. The only relief lies in requiring better preparation and some professional training for all our teachers. Until the normal schools address themselves to the problem of preparing rural teachers, the plan of devoting the last year of a high-school course to normal preparation seems to be most desirable.

Authority and money must be given the United States Bureau of Education that it may undertake a campaign for the reorganization of the rural school. Other agencies now devoting time and money to social uplift should be invited and urged to join in an effort to investigate thoroughly rural school conditions, to propose remedies, to direct public attention, to suggest remedial legislation. Withal, there must be a nation-wide campaign of publicity and organized help.

Under the wise and capable administration of Commissioner Claxton the rural schools are to be helped as never before. We are earnestly hoping that some of the great foundations will add to their other activities the promotion of education in the rural schools. These boards, with their corps of skilled workers and their great financial resources, could accomplish more than any other agency. This problem is perhaps the greatest in America to-day. Certainly it is the greatest educational problem. It is nothing short of attempting to secure to 12,000,000 children their natural birthright—equal educational opportunity.

If we want to get more out of the rural schools, we must put more into them. We can never have the best rural schools until we have aroused public interest in them. The national life and character of to-morrow is set and directed by the schools of to-day. The country is the Nation's great recruiting ground. To it the city has always looked for its supply of men who do the great things, who command armies, build industries, take the initiative. It is true that the cities are the centers of organization, but they are not self-sustaining. The rural population must always be the bone and sinew of any country. More than one-half of our school population is trained in the rural schools. These schools are inadequate.

CONSOLIDATION OF RURAL SCHOOLS.

ADELAIDE STEELE BAYLOR,
State Department of Education, Indianapolis, Ind.

Although the matter of consolidating rural schools in the United States has been under consideration since 1869, rapid strides have been made in recent years. To-day almost every State has taken some steps toward consolidation, and in many States the one-room district school will soon be a thing of the past.

The advantages promised by consolidation are numerous, and when the transition has been carefully made they are all in evidence. They include larger school plants; sanitary buildings with modern conveniences; laboratory facilities; industrial education, including practical agriculture by means of farms in connection with the centralized plant; closer supervision; a new community spirit, aroused by the new conditions; and the utilization of the plant as a social center where parents and teachers come together to discuss matters of common interest. Through consolidation the high school is brought to the rural community with the same completeness that characterizes it in the city. The country boy and girl are not compelled to adapt themselves—many times to their detriment—to the city life in order to obtain a secondary education.

The peaceful establishment and progress of the consolidated school have been aided greatly by railroads—both steam and electric—motor cars, and other improved methods of transportation.

Our thoughts and energies must center not upon the annihilation of the old, but upon the building of the new. The consolidated school is not an experiment, but a necessary step in the evolution of school machinery, and that it may fulfill its purpose in the social scheme it must be established with care and consideration.

STANDARDIZATION OF THE COUNTRY SCHOOLS.

THOMAS H. HARRIS,
State Superintendent of Schools, Louisiana.

Records of school enrollment and attendance kept in Louisiana reveal, among other facts, that three-fourths of the children composing the first grade are hold-overs from previous sessions, but that from the second grade to the seventh there seems to be no alarming loss of children by dropping out of school, and no excessive numbers of hold-overs in the different grades. From the seventh grade to the eleventh, on the other hand, about half of the children fail of promotion or quit school.

It is also noted that the highest enrollment and attendance are reached during the early months of the session, usually the second,

and that the average attendance in the different grades falls far below the enrollment for corresponding months. The State-approved high schools, which are required to meet certain standards as to buildings, equipment, and teachers, and are regularly inspected by the high-school supervisor, lose fewer children and have more regular attendance than the other schools.

I am expected to state how the standardization of the country schools would prove an important factor in preventing some of the waste to which I have called attention.

Many of the small country schools throughout this country are taught in poor, inadequately equipped buildings, the teachers being inexperienced, poorly educated boys and girls, who are burdened with a larger number of classes than they can properly teach. Thus the parents see but few evidences of progress on the part of their children; therefore their interest does not keep up to white heat, and they allow their children to attend school irregularly or to drop out altogether.

To improve these conditions it would seem wise to classify country schools, fixing certain standards as to buildings, equipment, character of instruction, length of term, number of grades, and qualifications of teachers, and to stimulate local interest and effort by offering each school maintaining the required standard a small special State appropriation in addition to its share of the regular school funds.

RURAL-SCHOOL FUNDS—THEIR SOURCE AND DISTRIBUTION.

EDWARD C. ELLIOTT,

Professor of Education, University of Wisconsin.

One portion of our task is to discover ways and means that will guarantee to every rural school a constant sufficiency of support. Just what this sufficiency should be is fairly well established to-day in the standards of educational economists and engineers. We know within reasonable limits of variability what sum should be expended on a rural school, whether it be a 1-room, 2-room, or 10-room school, in order that there may be a fair chance of producing those results that approximate the needs of our civilization and typify the idealism of our education.

One aspect of this extraordinarily complicated problem seems clear, and that is that the country school must become far more than it is to-day a State school. Organization, support, control, and supervision of the school on the basis of minor territorial jurisdiction have been proven the country over to be hindrances of no mean rank. Local self-government in rural education, that deceptive platitude of the politicians on and off the platform, has meant an insidious growth of local self-complacency, itself the greatest obstacle to the

logical and necessary development of the school. The problem of rural-school improvement is one of rural-school funds; the problem of rural-school funds involves a widespread campaign among the people of our different States, so that it will be realized that the interests of each rural school are of the deepest concern to each community and to each inhabitant of the State. Unity of educational purpose is bound up with unity of fiscal support.

THE RURAL-SCHOOL PLANT.

LUTHER L. WRIGHT.

State Superintendent of Public Instruction, Michigan.

The consolidated rural school is now a part, at least of the school systems in about two-thirds of the States. So far as my knowledge goes, there has not been a case of abandonment of a completely consolidated school once fully established. However, these do not need the attention of this committee which the others do. Accordingly, the recommendations here made will relate to the one-room country school. Even in the best States and in the richest communities the school plants are insufficient, inadequate, and not in keeping with the community material resources.

The enacting into law of a provision that the heating and mechanical ventilating plants of every country school should be approved by some competent authority before the building may be erected is recommended. Such a building should have a basement that will extend far enough above the ground to afford ample light, with sufficient room for heating plant, toilets, workshop, and kitchen. The ordinary stove should be discarded, heating and ventilating being much more effectively accomplished by a furnace.

In the workshop there should be benches and common tools. These may be provided for as little as \$20. In the kitchen there should be a cookstove, table, cooking utensils for the preparation of noon lunches and for lessons in domestic science. The ground floor should provide for the cloakrooms and schoolrooms.

Ordinarily the school grounds in rural districts are too small. There should be enough land to allow for lawn, playgrounds, school gardens, and experimental farm. Trees, shrubs, plants, vines native to the locality should be planted. Such a rural school site should contain at least 2 acres. Teaching the elements of agriculture in rural schools should be required by law. The ordinary rural-school teacher is not prepared to teach the subject. Until we have a larger unit of organization, either the county or township, and with that the country high school, we can not hope for great efficiency in the teaching of the science of agriculture.

In the schoolroom each child should have at least 15 square feet of floor space, not less than 200 cubic feet air space, and a fresh-air supply of not less than 30 cubic feet per minute. The light must come from windows grouped on the left side of the pupil, or on the left side and rear, or on the left side, rear, and rear right, or in the ceiling—never through front windows. The total glass area in the windows of each study or recitation room must equal at least 20 per cent of the floor space of the room. All the seats in any row in a study room must be of the same size number; that is, there must not be a No. 4 desk in front of a No. 3 seat. The space between the back of the seat and the edge of the desk should vary from 9 to 13 inches. Blackboards should be placed from 18 to 28 inches from the floor. Every schoolhouse should be provided with one of the sanitary drinking fountains. No better educational influence can surround the child than clean, well-kept, and beautiful surroundings. Schoolrooms must be as carefully cleaned as homes—floors, windows, walls, and furniture. Unless they are so kept the schoolhouse may become a breeder of disease. For \$350 it is possible for the rural school to have satisfactory toilet rooms. The ordinary school outhouse is a great menace to the moral as well as physical life of the child.

The walls of the schoolhouse should be properly tinted and decorated. The subtle, silent influence of good pictures can not be overestimated. Emphasis should be placed on the value of good reprints of the masterpieces. Gaudy chromos and advertising cards should have no place on the schoolroom walls. Beauty can not be taught by preaching it or praising it. Beauty must be taught by creating it, by living in the midst of it, by having beautiful things come into the experience of the individual.

Because the habit of reading good books is a most valuable adjunct to an education, a library supplied with interesting reading of the better class is an essential part of the ideal school plant. This habit should be formed as soon as a child learns the mechanics of reading, and he should be encouraged to read books that he will enjoy and at the same time be benefited by.

THE PROBLEM OF RURAL EDUCATION.

DAVID SNEDDEN,
Commissioner of Education for Massachusetts.

It seems that the problem of rural education has been greatly complicated by certain traditional forms of organization which are peculiar to America. The elementary school was evolved before the high school, and as a consequence the former is customarily organized on

the basis of eight or nine grades, the high school customarily beginning on the top of this. Many of the problems of the rural school would be simplified if the rural school teacher had to deal only with children 12 years of age or under, older children being transported to centers for the purpose of receiving more advanced education. I believe it is easy to train a young woman to be a successful teacher of children for the first six grades, whereas I believe it to be exceedingly difficult to give a satisfactory education in the normal school for a person who must also teach grades 7 and 8. The weakest part of our American education is that which concerns young people over 12 and under 16.

If conditions remain as they are at present, it will be a long time before we shall have teachers who are qualified to handle in rural schools the upper-grade work. It is probable, indeed, that successful upper-grade teaching can only be carried on by means of departmental teaching.

THE PROBLEMS OF STANDARDS OR TESTS OF THE EFFICIENCY OF SCHOOLS OR SYSTEMS OF SCHOOLS.

I.—By GEORGE DRAYTON STRAYER,

Professor of Educational Administration, Teachers' College, Columbia University.

There are three distinct but intimately related fields in which standards or tests might be applied: The first with respect to the business administration of schools; the second in the field of organization and administration of the more strictly educational activities; and the third in the measurement of the achievement of individual pupils, classes, or schools in the subjects commonly taught.

Under the head of business administration are to be considered the location of school buildings, the type of building erected in relation to its cost, the rating of buildings at present in use, and the standardization of equipment and of supplies. In the field of organization and administration of the educational activity of a school system investigations concerning the attendance of children, involving a measure of the efficiency of the enforcement of the compulsory-education and child-labor laws, the amount of attendance in relation to the proficiency of children, the effect of part-time classes, the results secured from vacation schools and from a longer school day, are of primary importance. Another important inquiry in the field of organization and administration is found in a study of the classification and progress of children through schools, involving the effect of size of classes; the amount of retardation, acceleration, and elimination; the results of individual instruction or of special methods of classification and promotion; the value of classes organized to take account of individual differences, whether of intellect or physical

condition; and the success and results of medical and dental inspection. The evaluation of the results secured from special types of schools or other special educational activity and the measure of the success of the teacher's work are also to be included in the discussion of tests of organization and administration.

In measuring the achievement of individual pupil classes or schools in the subjects commonly taught a beginning has already been made in this direction in scales or units of measurement which have been derived in some of these fields.

II.—By CARROLL G. PEARSE,
Superintendent of Schools, Milwaukee, Wis.

I recognize, as we all do, the great value to come from these splendid detailed studies which are made for the purpose of showing us how to test the effectiveness of our work. But there are also certain different signs in which we may read our success or failure as teachers or as administrators of schools.

One of these tests, which any of us can apply, is to note whether or not the teachers and pupils in our schools are experiencing the "joy of life." A very good test of our success, in at least one direction, may also be read in the street manners and bearing of our pupils. It is possible for us to judge without quantitative measurements whether the pupils and the teachers are doing their best, working up to their capacity, getting out of themselves the best that is in them.

We may judge our success also by noticing whether or not our pupils remain in the school and show some interest to receive all its benefits, or whether, at the earliest possible moment when the law or the parental authority will permit, they leave our instruction to enter upon some other occupation.

The school may also measure its effectiveness by the attitude toward life which its pupils have after leaving the school. We, as teachers, are advertised by our product; unless the school implants in the majority of its pupils good ideals of conduct and of life, a good disposition toward fellow men, and a high standard of duty to and responsibility for the welfare of the State, we may know that something, a very important part of our opportunity as teachers and school administrators, has been lost sight of or that we have failed in its realization.

III.—By CHARLES H. JUDD,
Director of the School of Education, University of Chicago, Ill.

One very common method of judging the efficiency of a school is to observe the work which the students do in the advanced school to which they pass after leaving the lower school. The question

which should be asked can be formulated as follows: Does a student maintain in the school to which he is promoted the same relative rank that he held in the lower school? That is, Does the student who stands in the higher third of the high-school class succeed in maintaining himself in the higher third of the college classes, or does he fall to a lower position? If the National Council or the Department of Superintendence could be interested in this kind of information it would be possible to develop the plan so as to include elementary schools as well as secondary schools and colleges.

IV.—By LOTIS D. COFFMANN.

Supervisor of Training, State Normal School, Charleston, Ill.

Advancements in education, are made by varying the emphasis upon the problems of education. Many of the standards in education have been arrived at and have been practiced so unconsciously that they have become a part of the *mores* of the teaching population. Another type of standard is that which is created by definition, generally registered in laws.

In addition to those standards which have been established by legislative enactment there are still others that have been formulated by organizations, operating under private initiative, or by educational institutions acting under a cooperative agreement.

The difficulty in handling by scientific measurement problems that lie within the field of teaching method is found in the fact that they deal directly with human nature. This makes them far more subtle, complex, and variable than those that pertain to school finance. Variable quantities can be measured by employing the statistical technique.

The time when we shall have standards for testing schools determined by thoroughly scientific methods is near at hand. Introspection can never in any true sense give us an applied service. The real advance must come from an acquaintance with experimental technique.

STANDARDS AND TESTS OF RURAL SCHOOL EFFICIENCY.

EDWARD C. ELLIOTT.

Professor of Education, University of Wisconsin.

There is a generally recognized standard for urban elementary and secondary schools. We need also to know the constitution of a standard rural school, and by this standard to develop among our country teachers, school officials, and people a consciousness of the comparative worth of their own schools. This standard rural school needs to exist in reality, not merely in abstraction.

It has seemed to some of us that the recent movements to secure Federal aid for agricultural and other vocational education in the several States might better have recognized the principle of indirect, rather than direct aid, in so far as these movements were calculated to better rural schools. The establishment and maintenance by the Federal Government of one or more demonstration rural schools, both one-room and centralized, in each of our States would render incalculable service for the elevation of the standards of efficiency for rural schools, far more perhaps than direct appropriations in aid. A standard of value in education, whether it be in finance, organization, or instruction, must exist as a living objective value before it will serve to stimulate our people and our educational workers into an active desire to reconstruct the rural school. The layman is as sensitive as the expert to the demonstration of rural values. The ordering of these values yet lies before us as one of our great tasks.

DEPARTMENT OF SUPERINTENDENCE, NATIONAL EDUCATION ASSOCIATION.

WASTE AND EFFICIENCY IN SCHOOL STUDIES.

W. H. ELSON,

Former Superintendent of Schools of Cleveland, Ohio.

New criteria of efficiency turn the center of administrative interest from the needs of the few and the strong to the needs of the majority.

The failure of the school to hold its pupils is one of the great sources of educational waste. In a typical city it was found that for a 10-year period but 48 per cent of all the children enrolled in the first grade reached the sixth, but 36 per cent reached the seventh, and that but 1 pupil in 4 attained the eighth grade. In a word, taking the records for 10 years as a basis of judgment, it was found that only one child in two ever advanced in the elementary school beyond the fifth grade.

In the high school the records show similarly large losses from withdrawals. It was found that for a 10-year period one child out of every three withdrew before the second year, one out of every two withdrew before becoming a junior, and two out of every three failed to graduate.

Nor do the records show that these losses within the school are due to its breaking down in recent years, for, taking the first half of the 10-year period, the per cent of those graduating from high school or completing the eighth grade is a trifle less than for the last half of the period, thereby showing a slight gain in holding power on the part of the school.

When the life history of 10 graduating classes of high school is made the basis of judgment, the losses within the school from withdrawals are surprisingly large. Broadly speaking, it seems reasonable to conclude that of those entering the first grade 95 per cent leave without finishing the high school, 50 per cent withdraw before reaching the sixth grade, and 75 per cent before attaining the eighth grade; while of those entering the high school one-third leave before the second year, and two-thirds drop out before graduating. This is fairly typical of the country at large. It reveals enormous waste due to withdrawals from schools. Naturally the question arises, To what extent is the school itself in organization, instruction,

course of study, standards of value, or otherwise responsible for those losses and for its own lack of holding power. Vocational high schools have a marked influence in tending to keep children longer at school and even in increasing attendance at college-preparatory schools.

But losses by withdrawals are affected also by retardation. In a typical city the records show that, exclusive of all special schools, one-fourth of all elementary pupils were retarded one to four years.

From data available it seems reasonable to conclude that, of all money spent on public education in American cities, one-tenth to one-eighth is spent in taking children over the work a second time, an enormous loss considered from any point of view. As a money tax due to the maladjustment of study courses and promotion schemes to the abilities of children, it is excessive. When the school is tested for efficiency by its ability to carry children through its course on time, it shows great waste.

The maladjustment of the work of the school to the capacities and interests of children is expressed in terms of withdrawals, retardation, repetition, and nonpromotion. The thoughtful student of educational waste can not fail to reach the conclusion that the school is addressing itself to the stronger group, and setting its standards of attainment beyond the range of the average children.

Methods and standards of promotion must also be made more flexible. There is urgent need, too, for standardizing subjects, departments, and schools.

A study of educational waste forces the conclusion that in the collection and use of data to guide in measuring the efficiency of the school and in determining administrative action, a mere beginning has been made; that if the efficiency of the school is to be definitely measured careful record of school losses must be kept, to the end that study courses and promotion schemes may be adapted to the abilities, needs, and interests of all the children, and the school itself be thereby enabled to check its own waste.

DEPARTMENTAL TEACHING IN THE ELEMENTARY GRADES.

W. L. STEPHENS.

Superintendent of Schools, Lincoln, Nchr.

The tendency throughout the country toward departmental teaching in the more advanced grades of the elementary school is pronounced. This tendency has in the main resulted from the following generally prevailing conditions: (1) The difficulty of securing efficient teachers for the upper grammar grades; (2) the desirability of preparing pupils to assume more easily and successfully the larger freedom and responsibility of the high school; (3) the vitalizing of

instruction by the specialist to the end that the waste resulting from unskilled teaching may be lessened.

The influence of these conditions led to the introduction of departmental teaching in the elementary schools of Lincoln three years ago. Four of the ten grammar schools are using the plan, the essential features of which, as adapted to our work, are as follows:

1. The sixth, seventh, and eighth grades are included in the departmental scheme.
2. Four clearly defined departments have been created, i. e., mathematics, geography and history, grammar and composition, literature. Music is assigned to one of these departments, art to a second, and writing to a third. Each teacher gives instruction in spelling, civic and moral training, and hygiene. Furthermore, each teacher is held responsible for the instruction of the pupils in the correct use of English in speaking and in writing.
3. Each class has a teacher, termed the class sponsor, with whom it spends in recitation and study about one-third of the time, and who is responsible for the general conduct and attendance of the class.
4. No pupil recites to more than four teachers. This number does not include teachers of manual training, cooking, and sewing.
5. Weekly conferences of the departmental teachers with the principal are held, to unify and correlate the work and to discuss the needs of individual pupils.

This plan has been in operation for a time sufficiently long to justify the drawing of certain conclusions with reference to its dangers and weaknesses as well as with reference to its advantages.

If the adaptation of departmental teaching to the upper grammar grades is made with the following necessary provisions—avoidance of overdepartmentalization, frequent conferences to determine the needs of the individual pupil and to correlate sanely the work of the departments, the hearty sympathy for and belief of principal and teachers in departmental teaching—results more satisfactory than those found under the single-teacher plan will be secured. The discipline will be more wholesome, classrooms better equipped, stronger unity and force in school management evolved, better preparation for the larger responsibilities of the high school acquired, a more skillful corps of instructors developed, whose teaching will be vitalized by the spirit that nourishes the life and growth of the child for whose welfare the school exists.

THE CHILD v. PROMOTION MACHINERY.

D. E. PHILLIPS,

President of Board of Education, Denver, Colo.

The most insane educational idea that has hypnotically spread from the colleges down to the first grade is the idea that a teacher with 40 children can ask a question, call on a child to recite, grade

him 0, 4, or 10, keep this up for 5 or 10 months, then present an array of questions to be answered and graded in like manner, and by the final addition of these results determine the child's knowledge and fitness for promotion. Yet college professors and principals stand up and say that such a thing is a *necessary evil*. It is only the power of habit and the suggestion that such things are necessary that dominate our teachers and the community. Only a few days ago I heard a principal say that he tried to get along without grades and report cards for three months and found that all concerned preferred the old system. Can you educate a community or teachers out of a life-long custom in three months? In that same city are schools as good as were ever run in America in which such necessary evils have never existed.

In some institutes where teachers were inclined to talk glibly about grading on what the paper was worth and avoiding partiality I gave the teachers a boy's arithmetic paper to grade. One hundred and fifty teachers gave grades ranging from 29 per cent to 88 per cent, but they immediately began to say that they would be obliged to know the boy first. I said, "Very well. But why do you then pretend that you base your per cent wholly on the paper?" They then named 14 different things that should be considered in passing that boy. Again, what is poor work for one pupil may be excellent for another and worthy of praise.

Whoever has observed a growing, bubbling child knows that the expressive side of life never keeps up with the receptive side. The highest, truest, and deepest value of education can never be measured objectively. You feel it, or read it in the soul of the individual. There is some truth in the paradox that the more we know about a thing the less able we are to define it. When a high-school boy, I could define electricity better than Edison can to-day; and God knows that I could define Him better when a Sunday school pupil than I can after years of study.

There is a danger that threatens our country schools. Some States have developed the system by which the county superintendent or a State board prepares the questions that determine eighth-grade graduation. They are sent to the teachers in closed envelopes, to be given to the pupils, answered, and returned for correction. If such a vicious system were not found in my own State, I would say what I think about it. During the whole year both the teacher and the pupils keep guessing what the questions may be. Proper interest, independence, and originality are crucified. How does the superintendent or this clairvoyant board know whether or not a child whom they have never seen should enter the high school?

Finally, I must maintain that each child should at all times be at work in the grade and in the subjects that he can get the most out of,

without regard to what he knows or does not know about studies behind him and without regard to how much more or less he knows than other pupils. I hold that outside of the immediate business or occupation of an individual, the primary function of facts is to create the proper attitude toward the activities and problems of life and to arouse interest and intellectual activity. Will it not be found that the old system of "know so much before promotion" exactly reversed this order? Under such an idea attention, interest, and intellectual activity existed for the accumulation of facts and knowledge.

Overthoroughness and accuracy have been made an immense burden without sufficient after results in life to justify them. Intelligence, not memory, is the most precious thing in the universe. You are doing a rank injustice if you make pupils mark time or keep them back in anything.

To allow the child to make the most of every moment of life in our public schools is not impossible. It is being done. When shall we learn to teach children and not subjects and textbooks: to look into the soul of the child and realize how far above our machinery it might soar if only we would not care more for the machinery than for the growing soul of the child?

SOME ADJUSTMENTS AND CHANGES IN THE COURSE OF STUDY AND SCHOOL ORGANIZATION SUGGESTED BY THE NEEDS AND THE CAPACITIES OF CHILDREN THAT VARY FROM THE STANDARDS SET FOR AVERAGE PUPILS.

D. H. CHRISTENSEN.

Superintendent of Schools, Salt Lake City, Utah.

It is manifest to all students of the school curriculum that the difficulty of meeting the needs of the individual child in class instruction increases as he moves upward in the grades. The nature of the prescribed work in primary grades and in the lower part of the grammar department is such as to appeal to the interests of practically every child and to meet his general requirements. His marked personal tendencies and aptitudes begin, however, to assert themselves as he passes through fifth and sixth grades, which in so many respects represent a transition period in his life, and when he enters the seventh grade his natural bent is likely to be easily discerned. In some cases, perhaps, the quality of his previous teaching may be a factor in predetermining this inclination, but most likely it is an expression of his own individuality developed under proper environment—the home and the school—and it may be that heredity has played its part. At any rate this condition arises, and who will say

that the disinclination to attend school manifested by so many fifth and sixth grade boys, which all educators recognize and which has had voluminous discussion from many leaders in educational thought, is not due in part, at least, to the fact that the prescribed work in seventh and eighth grades, which under present conditions has so little regard for individual aptitudes and inclinations, is too restrictive in its scope and fails to appeal to them? Germany in her splendidly organized system has long since taken cognizance of individual proclivities and needs and has provided elective work with certain well-guarded restrictions as early as the third year. We can not hope to begin so low in the grades, even if it were desirable, but the opportunity for some degree of choice should be given at the beginning of the seventh year.

In the regular classroom an effort is made, under conditions not altogether favorable, to provide a condition that will permit the teacher to eliminate in a measure at least the exclusively group or class plan of instruction. This tendency finds expression in her conscious effort to adapt her instruction to individual needs in the course of the development of a subject. The difficulty is greatly enhanced when some of the children, by reason of exceptional native ability or of development or because of limited capacity, are much above or below the class standard. The pupils of a class, a month or two after the beginning of the semester, may then be resolved into three groups, at least two of which are found in most rooms: I. The middle group, including those that are of average rank and also the ones just below and immediately above the class standard. II. Those further below the class standard than the ones already listed. III. The pupils in advance of Group I.

The cause of the multiplicity of such classes in the modern graded school is of interest and value only as it aids the effort to meet and solve the problems that naturally arise. And the problem of most vital concern is that relating to the environment and instruction best suited to the needs of the children materially above or below the class standard. The so-called ungraded room into which such children are brought for individual instruction and study, for such time as their interests may require, has demonstrated its suitability over the regular classroom. Frequently after a few weeks' training some of these children advance until they meet satisfactorily the requirements of the next advanced class, while others move upward into the middle or normal group of their own. As they pass out, new candidates come to take their places, and thus the ungraded room has an ever-changing enrollment. The experiment of the ungraded room in this city has been tried enough to prove its place in our scheme of education, the aim of which is to reach and to serve the interests of the individual rather than the mass.

These departments provide a place for the normal child who shows an appreciable variance from the class standard set. Some of these pupils are above the average child of their grade and some below, but all of them are capable, at least so far as we can determine in advance of a careful individual study, of moving eventually into and through the high school, although those in the lower stratum will require more than the allotted time. But there is still another group—a small one to be sure—in which the members are deficient mentally, some bordering on idiocy. Unfortunately, but few States have made provision for them. They do not belong in the mental hospital, and justice forbids that they be excluded from the benefits of the public school, until such time at least as the State provides for their care and training. However, these children have no place in the regular classroom. All are a direct hindrance to the progress of the other children, and a few are a menace to the general welfare of the other pupils. For their own sake and for the sake of their associates, they should be segregated and placed in an environment especially suited to their own needs. The course of instruction for such children must be quite narrow in its scope, and it should aim largely to give motor and sensory training. Whether the lower types should be taught reading, even if possible, is open to grave doubt.

In the consideration of the environmental causes of some lighter types of mental deficiency, comparatively few in number and practically all responsive to the right kind of training, I am constrained to place an indictment against the school.

Is mental deficiency a by-product of the American school? To some degree at least, and in a very serious way, this seems to be true. First, in a negative way, as a kind of sin of omission, the schools seem to be responsible, by failing to provide possible and practicable educative means readily at hand for the elimination and lessening of mental deficiency; and secondly, in a positive way, as a kind of sin of commission, the schools seem to be responsible, first, by refusing in an aggressive way to permit the child to obtain at will the kind of training which might stimulate normal mental development, and, second, by forcing upon the child a kind of training which by its very nature is mentally stunting in its necessary effects.

The first phase of the problem here suggested has to do with the child who is of recognized normal mental capacity, but who is just enough below the average in mental ability as to be habitually unsatisfactory in scholarship and occasionally failing to pass in his class or grade, although at the same time he may show continual progress under regular class instruction, however slow or even sluggish it may be. Many of such children, who possess normal mental capacity but display subnormal mental ability, have been

brought up to grade, to a standard of satisfactory scholarship, by means of individual instruction and attention.

The second phase of our proposed problem has to do with the child, not of recognized normal mental capacity, but with the child who is apparently subnormal in mental capacity, the child who is not only mentally deficient but who is seemingly mentally defective, the child who is practically at a standstill in school progress and who is incapable of being restored to normality even by the individual instruction of the ungraded class.

Be it observed that this reasonable possibility is not claimed for all cases of mental deficiency in the schools, nor is it claimed, at present, for any particular percentage of the subnormal children. On the contrary, it is readily to be admitted that there is unquestionable and abundant evidence that certain cases of mental defectiveness in the schools, particularly those bordering on imbecility, are the products of hereditary influences, or generative conditions, or traumatic injuries, or other causes entirely foreign to the school, and that the defectiveness thus caused continues incurable, whether the child attends school or not.

Mental deficiency in any individual is evidently not integral; it is fractional. That is to say, contrary to the generally accepted theory, it is found that the mind is not defective as a unit in its sociological reactions, and that, on the contrary, the mind might be extremely defective in one field of sociological reactions and at the same time entirely normal in other large and complex fields of sociological reactions. For example, a child might be arrested in school progress and be extremely defective in scholastic ability, but at the same time such child might be normal, or even supernormal, in social development or in vocational ability, or in ethical habits, or in religious sentiments.

In conclusion I may say, with propriety, that school systems which still hold exclusively to the method of mass instruction, and provide no means for individual attention for the pupil of habitually unsatisfactory scholarship, are responsible for an educational waste, because they fail to utilize the practical and inexpensive means readily at hand for the elimination, or partial elimination, of this milder type of mental deficiency.

In the process of adaptation necessary for effective teaching the course of study must adjust itself to the child and not the child to the course of study.

A REORGANIZATION OF OUR SCHOOL SYSTEM.

J. H. FRANCIS,

Superintendent of Schools, Los Angeles, Cal.

The plan toward which we are working in our city, broadly speaking, follows:

1. One to two years in the kindergarten.
2. Six years in the elementary schools assuming responsibility for the physical, mental, and spiritual development of the child between the ages of 6 and 12.
3. Three years in the intermediate or junior high school, which may be completed at the age of 15, covering nine years of school work.
4. Five years in the high school, which brings the student to the age of 20, a good average age to begin the business of life.

This general outline of work designed to meet the needs of the largest number of American boys and girls is supplemented by—

1. The trade school admitting pupils according to physical development, irrespective of academic attainments.
2. Continuation schools open before and after school hours, offering work in manual subjects and optional with the pupil. This work, we hope, soon will include music, art, mechanical drawing, and public speaking.
3. Vacation schools during the summer months, open in the forenoons and designed to subserve two purposes: (a) To occupy the time of younger children in music, folk dances, play, gardening, natural language work, drawing, and manual arts; (b) to furnish regular academic work for those who wish to make up previous failures or secure the coveted official certificate in subjects yet to be taken before they can be vouchered for as educated young men and women.

4. Night schools for all grades and for all classes of people.

5. Special schools for the unsocialized individual who refuses to adjust himself to the regulations, formalities, and conventionalities of the schoolroom.

6. A liberal use of the ungraded room.

7. The social center, not yet a year old, but a very promising educational youngster.

Although the similarity of this to the German plan is to be frankly conceded, the latter should not be adopted for our needs but adapted to them.

According to the topic printed on the program, this paper should concern itself principally with that part of the school system covering the work of the seventh, eighth, and ninth grades done in the organization known as the intermediate or junior high school. At present we have five such schools in Los Angeles, enrolling approximately

3,000 pupils. Three uniform courses are offered in each of them—a general course, a commercial course, and an elementary industrial course. These courses are planned with two classes of pupils in mind: (a) Those intending to enter the high school, and (b) those electing to leave school at the end of the ninth year. Both are given full tenth-year standing in the high school. In the seventh year one option and in the eighth and ninth years two options are allowed out of a group of six or seven studies.

For the pupil going through the intermediate school we expect to accomplish the following:

1. To enable him to do some thinking that may be more or less his own.
2. To accustom him to departmental work and hence to prepare him for high-school methods. The pupil who has enjoyed the maternal care of a conscientious teacher in the common school becomes lost in the high school. An easier transition is afforded by the junior high school. Our experiment so far has resulted in 18 per cent of ninth-year intermediate pupils failing in one or more subjects, as against 42 per cent in the same grade of our high school.
3. To conserve his time and interest.
4. To offer an equipment and organization not possible under the grade plan, such as science laboratories, well-equipped shops, art and mechanical drawing rooms, cooking and sewing rooms, commercial rooms, music halls, gymnasiums, auditoriums, etc.
5. To develop in the individual social and self responsibility at an age when responsibility to society and to self become most important.
6. To offer instruction by male teachers.
7. To do for the boy and girl not going to high school what the high school is now doing for the boy and girl not going to college. In the next decade the intermediate school will surpass the high school in importance, because of numbers benefited. The high school, in its efforts to care for the boy and girl not going to college, has increased the number of college students manifold. So will the intermediate school increase the high school enrollment.
8. To offer opportunities for the child to find himself. The young people of this country must know earlier what they are to do in life and prepare to do it.

The intermediate has distinct advantages over the six-year high school which proposes to admit pupils in the seventh year and carry them through the twelfth. At least this is true in the larger cities.

The intermediate school assumes its true significance only when considered in connection with the extended high school. With but six years given to the mastery of the arts and the remaining eight years to the development of the individual and his preparation either for junior college work or for a definite vocation in life, our system

of education opens up tremendous opportunities and possibilities for the school children of the country and will make returns for the Nation out of all proportion to the additional cost necessary to operate it.

**THE VALUE OF THE EDUCATIONAL COMMISSION IN DETERMINING
THE EFFICIENCY OF A CITY SCHOOL SYSTEM.**

CALVIN N. KENDALL,

Commissioner of Education for New Jersey.

Efficiency tests which excite increased public interest, confidence, and support are likely to be demanded in public education at a time when "efficiency" seems to be the popular catchword. In this practical age there is sure to be a search for tangible results of educational processes. But is it too much to affirm that there must remain some vagueness and uncertainty in ascertaining the results of education? In the realm of the intellectual and spiritual, with which education has so much to do, there is a very large residuum, the value of which can not be measured by figures and tables.

As a result of my observation of teachers in action in many schools, I am skeptical of finding, by any known test or commission report, a definite measure of the value of much of the teacher's real work. The factory is one human institution, the school is another. The value of the output of one may be determined in the office, but the whole measure of the other institution—the school—can not be so measured.

With this qualification the educational commission affords a means, available to every community of considerable size, of reaching conclusions regarding the efficiency of its schools, measured, first, by what figures and tables may show; second, by the extent the administrative methods, the organization, the course of study, the schoolhouses and their equipment, are in accord with what has come to be widely accepted as the standard for American schools, so far as there is a standard; third, by observation of the teaching, and, speaking somewhat vaguely, but nevertheless confidently, of the general spirit of the schools.

Investigation may be of constructive value in two ways: In the first place, it may reveal to the school board and to the public the strong points of the schools—features which are locally unknown or unappreciated. In the second place, it may point out the desirability of certain improvements or changes which the superintendent has perhaps urged in vain upon callous boards or an indifferent public. The report of the commission may be valuable, in the third place, by pointing out the need of more money for the

schools. The investigation should also include a consideration of political conditions.

The activities of a system of schools are now so varied, so complex, so extensive, that some of these are in the best schools imperfectly carried on. This same imperfection is true of railroads, manufacturing establishments, department stores, scientific farming, and every organized human endeavor. It is true of the best of these, and managers are on the lookout for improved methods. So, likewise, it should be with the schools. In fact, an increasing number of superintendents are studying the problems of increased efficiency.

The commission, from its independent study of conditions, with an unprejudiced point of view, may be able to enlarge the vision, clarify the views, and recast the opinions of superintendents in respect to some of the many-sided activities of his work. Much depends upon the manner in which the commission is appointed, or, rather, at whose instance it is appointed.

THE RELATION OF AN URBAN COMMUNITY TO ITS PUBLIC-SCHOOL SYSTEM.

MARTIN G. BRUMBAUGH,

Superintendent of Philadelphia Public Schools.

Public education is the State's effort to promote and to provide efficient citizenship. It best accomplishes this necessary result by training each separate individual in its citizenry to cooperate most freely and fully with all other individuals. The State, for the ends of democracy, commits to the school the solemn and sacred service of fitting the child to do his part for life in that great social and civic activity which we usually think of as government in its broad sense. The essence of school training is cooperative and not competitive.

So long as the school is the only social agency broadly at work in a community and the life outlook of its pupils is only to a career of individual industry, one has a rural situation. Education here is a relatively simple process. But when the school is set in a great urban community, in which all activities of the individual are treasured upon by a multiform and highly organized economic situation, education becomes a vastly more complex process.

The legal and financial limitations which circumscribe the school should always be considered by citizens who in their zeal to broaden and, as they believe, enrich the work of the school, insist upon incorporating into the school's activities certain reforms that are either legally or financially impossible.

These limits upon the school tend to make it conservative. Private initiative frequently outruns public policy and the school is made to

appear as hostile to the progressive spirit of many good citizens. This situation is always possible in a great city, with its many divergent educational ideals and with its nonhomogeneous communities. It is, however, wiser and better to be held by some as conservative than to be held by any considerable number in the urban group as extravagant and visionary. The issues of public education are too momentous to allow of radical experimentation. What, then, is the outlook?

The school plant, its physical appointments, belongs to the people and should be freely used by the people for all sorts of educational activities that are not yet demonstrably within the range of the school. We are passing rapidly from the old and narrow idea that the school building is merely a place to educate children of a certain age in a defined way to an understanding of the fact that school-houses are the people's forum—to be used by them for every wholesome intellectual, social, recreational, and moral purpose that makes for the common good. We are coming rapidly to the opinion that the school building should be open day and night for every legitimate use that the community as a whole can vision. Private initiative is thus given a definite relation to constructive educational procedure. It is saved the unfortunate relation of destructive criticism—a relation that in general distorts and does not promote the stable educational procedure of a great city.

Private initiative can promote important agencies on the intellectual, physical, social, and moral sides.

HOW MAY A COMMUNITY LEARN ITS UNMET SCHOOL NEEDS?

WILLIAM H. ALLEN, Ph. D.

Director of the National Training School for Public Service, New York.

By six lines of attack must a community learn its unmet school needs:

- (1) By democratizing the purpose of the schools.
- (2) By demanding that the public be continuously informed regarding school work.
- (3) By making it easy for newspapers to report what the schools do and need.
- (4) By denying that the schools are better than the health department, police department, tax assessor, or the politics with which school children must learn to cope. Schools are weakened, not helped, by being separated from the main currents of community life and being protected against problems which play upon and educate the child before going to school and after his few short years at school.

(5) By encouraging school teachers, principals, superintendents, and commissioners to tell currently what they want, what they need, and what they dislike, and where they fail. This means adequate comparative statements, first by supervisory officers for schools within each community and then by county and State superintendents, by the United States Commissioner of Education, and by national comparing agencies such as the Russell Sage Foundation.

(6) By making individuals so proud of their schools and so interested in school problems that they will paraphrase Louis the Great and feel and say: "L'école—c'est moi!" (The school—it is I!)

The community which would see clearly its educational needs should have a comprehensive system of records and reports and should develop a more definite standard for the responsibilities of the school trustee. Because familiarity breeds a-tigmatism, myopia, despair, or at least procrastination in dealing with unmet needs, it is necessary now and then to bring in some outside light. One method of tearing away cobwebs is to send trustees, superintendents, principals, or teachers to schools of other communities. Another method of getting outside light is to bring in outside investigators.

The opportunity of a generation now confronts it in the application of the United States Commissioner of Education for a big enough program, big enough staff, and big enough appropriation. To secure funds for this wider program of comparative study is to take tremendous strides in helping every community in the country answer for itself the question, "What are our unmet school needs?"

QUANTITATIVE TESTS IN EDUCATION.

GEORGE H. CHATFIELD,

Secretary of Permanent Census Board, New York, N. Y.

The efficiency of our school systems is questioned. Commerce, industry, politics, philanthropy, and other great fields of endeavor are similarly agitated. Elimination of waste is the fundamental doctrine of the innovators—of waste in material, in effort, in energy, in lives, in property, in justice.

When the efficiency of school systems is in question, the material of discussion is largely opinion. A technique of investigation and measurement is slowly arising, but its development is retarded by the absence of a generally accepted and recorded basis of fact.

How shall the State measure quantitatively its fundamental problem? This is the function of the continually recurrent census—in more concrete form to know who all the children are, where they are, and the conditions under which they live, what they have done in school and after leaving school, until it may be fairly inferred that

the aims of the State have been realized. If the underlying theory is correct, a child can no more be lost to the appropriate training process in one part of the State than in another, and whether the community be large or small such may be the result unless the responsibility for continuously recording each individual child be definitely located.

The work of the permanent census boards of the State of New York—there are three, one for each first-class city, New York, Buffalo, and Rochester—is founded upon this conception. The existence of these boards is justified because of the immediate concern of the State for the future citizen and taxpayer.

THE FUNCTION OF THE KINDERGARTEN IN THE PUBLIC-SCHOOL SYSTEM.

LUCY WHELOCK,

Whelock Kindergarten Training School, Boston, Mass.

All kindergartners would agree on three fundamental Froebelian principles. These are the importance of each stage of growth, the development of self-activity, and the belief that we are all members one of another. To exemplify these in practice through specially selected means and the organization of the play activities is the function of the kindergarten.

If it be true that in America nearly 50 per cent of school children leave school before the sixth grade, and that the average period of school attendance is only five years, then every year conserved for education at the beginning is of the utmost economic value. It would also seem economically desirable to give the best tuition and guidance at the beginning, when the kind of world each child is to see and to make is largely determined. From the relative cost of education in different sections one would judge that this fact has not been fully recognized.

The kindergarten is of value to the school system in minimizing the number of retarded children. About one-half of all retarded children are retarded in the first two years of school life. The retarded pupils cost the taxpayers upward of \$25,000,000 a year. They cause four-fifths of the nervous strain on the teachers. They rob the rest of the pupils of much of the teachers' attention that belongs to them. To save the \$25,000,000 waste, the teachers' nervous strain, the time and effort that belong to all the children, would be a vast achievement.

The kindergarten can do all of this and more if the primary grades will accept their share of responsibility for the adjustment. If the primary school accepts its responsibility, a kindergarten promoted

class may keep itself very near a unit for the entire eight grades. The kindergarten may save the taxpayers many times the cost, may postpone the teachers' retirement several years, and impart to the work with the other children an inexpressible impulse.

The advocates of the theory that the young child is a "little animal" and should be left free to carry out his animal impulses in some convenient back yard forget the scarcity of back yards in a congested city district. They also ignore the world-wide proof of the assertion that those who guide the first seven years of a child's life may make of him what they will. They fail to see that a civilization which desires to "let the ape and tiger die," must view the child as father to the man. As figures indicate, the State may later have to pay \$255 a year per convict in order to protect itself from the neglected child, who may be initiated in his formative period into the standards and ideals of the social group at a tenth of that cost.

For the 30 years of its existence in this country, the kindergarten has held to special educational materials designed to aid and abet the child's self-activity. These materials are used to develop the powers of observation, comparison, investigation, experiment, and invention. They are organized into a series, that there may be progressive guidance and consecutive exercises. They offer means of sense training, but this is not their final purpose. Neither is motor training or manual training the chief end. Their goal is efficiency, which is the power to do, to produce.

The aim of productive activity distinguishes the kindergarten at once from the Italian system now so much before the public. The theory of education through play is common to the two systems, but the use of play materials to provide a quick and easy approach to the arts of writing, reading, and arithmetic, which is a characteristic of the Montessori method, does not form a part of the kindergarten scheme. Its materials are developmental, not "didactic." It makes sense training and motor training a part of its educational plan, but not the whole. Nor does it limit its production to handwork. To make a city is well; to make a city beautiful is better.

The song, the rhyme, and the story appeal to feeling and influence the imagination, that faculty which rules the world. The scientific pedagogy by Dr. Montessori places emphasis on practical life, and disclaims any appeal to the imagination. But it is most impractical to ignore the faculty which has built cities and adorned them, bound continents together, and given to man the bread of life.

Finally, we must consider the function of the kindergarten as a place for social training, which seems to be excluded from Dr. Montessori's system. It would be difficult in a public-school system to promote any theory of education which did not recognize the value of

group and cooperative work. The ideal citizen is the neighbor. Who is my neighbor? is a question the school is to answer, if it meets the demands of the society which supports it. School is not preparation for society. It is society. Here, as in the greater world the law of membership holds: "We are all members one of another." The preliminary to working together is playing together, and at all stages we must live together.

Free play gives scope for the development of individuality. It originates. It discovers. It explores. It gives freedom and power.

Organized and guided play gives collective power. It enforces the virtues of the group—loyalty, a sense of law and order, obedience, self-subordination, and cooperation. It is a drama in which each must act his part. Organization and direction of the play impulses, control and obedience to the law of the whole, are absolutely essential in any group of children where educational and social motives are considered. Our American Republic is founded on the belief that "United we stand, divided we fall." Men are willing to bleed and die for this belief. To fail to demonstrate it in school training would be a serious defect. Because of its adherence to basic principles of education and life the kindergarten claims its place in a public-school system.

By its industrial training it makes the beginning for practical life, by its culture training for a good life, and by its character training for a righteous life. In the past its task has been to leaven the school with its spirit; to demonstrate the educational value of play, resulting in the municipal playgrounds; to show the importance of the story and dramatic game in education; and the significance of group work in relation to community life. Its task to-day is to improve itself by better practice of its own ideals.

DUTY OF SUPERINTENDENTS IN THE ENFORCEMENT OF CHILD-LABOR LAWS.

OWEN R. LOVEJOY,

General Secretary National Child-Labor Committee, New York.

The schools and not child-labor committees must bear the responsibility of children who are thrown into idleness by child-labor laws. School superintendents can help enforce child-labor laws by making it clear to the public that the school is neither a misfit nor a failure and by pushing compulsory education into every part of the country. Most children leave school to go to work within a few weeks of the age limit set by law. If the law lets them work at 14, they go to work at 14; if at 12, they leave school at 12. Where laws protect children to 16 years the school holds an increasing number to that

age. It is the duty of the superintendent to get all the children in school. The public school is public, and the taxpayer has a right, as a matter of business, to see that every child, not almost every child, is educated.

A complete and accurate school census and an adequate truancy department are essential. The truant officer now is a sorry joke in many cities. He must be held responsible to the State for every child in his community. The school is a social agency and must recognize that the problem of education can not be separated from family problems of food and clothing, employment, recreation and rest, ventilation and sunlight. No other public official can so well appreciate the needs of school children before 9 o'clock in the morning and after 4 o'clock in the evening.

Children are led out of school and forced into industry frequently because teachers want to rid their classes of backward and unruly children. The development of public interest in these children by means of teachers' and parents' associations, and adequate treatment of the special children, is the only way to save them. Driving poor students into mines and factories does not solve the problem, it only makes room for more poor ones. Every teacher in every city school should be compelled by the superintendent to know the child-labor law of his State. Education must be practical for this industrial age. We should hold the children in school, win the loyalty of parents, and eventually win the wholesome respect of the forces that now want to employ children according as we link courses of study to living problems. Child labor exists to-day because employers, parents, and children want it. If the school can win the loyalty of the children, we can afford to ignore the desires of the few employers who feed on the product of child labor. Let the last two years of the primary grades be filled with work that will so win the enthusiasm of the child that he will not automatically fall in the present cleavage between this and the high school.

But leaders in vocational guidance and industrial training are resisting the tendency to make the school an adjunct of the factory. The school may properly be so used with youth of 16 or 18 years, but with those of 12 or 14 years another factor is involved. Our duty is not to try to fit these children into industries. The tragedies of child labor are not so much due to the poor training of children as to the poor opportunity offered them by industry. The pressure of family poverty and the pressure of demand for cheap labor are the chief factors for drawing children away from school and into industry. Hence if the school men understood local industries they could often dissuade children from leaving so early to enter them.

Three-fourths of the jobs offered young children are unfit for them under any condition—blind alleys from which they back out in a few

years to join the ranks of industrial misfits. By bringing industrial considerations into our school course; by making children intelligent as to the history, significance, and opportunity of various occupations; by the development of school gardens and other outdoor laboratory work; by teaching the dignity of honest labor and the economic sin of making bad goods out of good material and the twin economic sin of paying wages that will not sustain life in reward for labor, we shall enrich and enlarge the school curriculum, making it so attractive that children will voluntarily remain in school one or two years longer than at present, and we shall save just that much of childhood to a richer, fuller maturity.

HOW FAR SHALL THE PUBLIC-SCHOOL SYSTEM CARE FOR THE FEEBLE-MINDED?

JAMES H. VAN SICKLE.

Superintendent of Schools, Springfield, Mass.

The opinion is gaining ground that the care of the positively feeble-minded, like that of the insane, is a State function and not one for local communities. Few States have yet made adequate provision for the care of the feeble-minded; consequently for the present most cities and towns must do what they can independently till the State is ready to carry the full burden. The public is slow to realize the extent and gravity of the problem. One of the most competent authorities places the number of feeble-minded in any community at 3 to every 1,000 of the general population. These are individuals who can not sustain themselves in competitive industry. They remain children all their lives—children in intellect and will, though adults in stature and in instincts.

Boys of this class, if left to themselves, are likely to drift into criminality. But whether out of prison or in prison they are a public charge.

The feeble-minded girl, if unprotected, is a still greater menace to the community. While there are feeble-minded children born into good families, such cases are sporadic. They amount to less than 20 per cent of the whole number; 80 per cent of the feeble-minded are so by inheritance. To prevent the marriage of feeble-minded girls and to shield them from temptations to which they are notoriously easy prey is obviously the duty of society as a plain matter of self-defense.

While feeble-minded boys are within the usual compulsory-attendance age, they are not a menace to school or society if taught in separate classes. Moreover, when so segregated in the public schools they may be studied, with the demonstrated result that a number will

prove to be only backward and can safely be returned to the regular classes after time and special help have cooperated toward improvement. It is when those not susceptible of improvement reach the age of 14 or 16 that they become a menace. The feeble-minded girl may become a menace several years earlier. The public school can not, therefore, with safety retain feeble-minded children very long without a radical addition to present means for their care in the form of residential homes or colonies with farm, garden, shop, and productive industry such as are now provided only by the State. There must be separate homes for boys and girls, to which they would be legally committed for life. This would not, of course, be necessary where the feeble-minded boy or girl has a good home and reliable parental protection. It would, however, be necessary in a very large majority of the cases.

It has been suggested that, if parents are unwilling to have their children transferred to such a colony after they have exhausted the resources of the special public-school classes and have left school, the feeble-minded may be guarded by teachers or probation officers, who keep watch of them at their homes, and upon any indication that they are going wrong or becoming in any way a menace to society take immediate steps to have the State interfere and take such children to the colony home. Should society adopt this plan of self-protection, the school might properly be called upon to aid, since the teachers of the special classes are the only ones who know intimately the characteristics of the children in question.

The teacher of the special class should be equipped not only with technical knowledge of mental defects, but with ability and willingness to enter into sympathetic and friendly relations with parents of feeble-minded children, gradually and gently acquainting them with the child's real condition and with the advantages which the State colony offers and finally securing their consent to a transfer to the institutions.

The school physicians and other physicians of the community and social agencies of various sorts should be drawn into cooperation so that each child may be put into as good physical condition as possible. The public school will render its greatest service in fitting these positively feeble-minded children, as far as may be, for self-supporting under close supervision in some of the simplest industries that can be carried on in colony homes and in sifting the human material that it handles so that the various elements will reach their proper goal, this goal being life in society for the curable cases, life under protected conditions for the incurable.

Another service which the public school can perform is that of acquainting the public with the gravity of the situation and the need of greatly increased facilities for dealing with the growing

menace of the feeble-minded. To this end it is important that permanent records be kept, which will afford cumulative evidence of a convincing character.

DO SCHOOLS OF TRADES MEET THE NEEDS OF CITY CHILDREN FOR VOCATIONAL TRAINING?

CARROLL G. PEARSE,

Superintendent of Schools, Milwaukee, Wis.

Once commercial and industrial establishments demanded service and trained their young employees for it; to-day it is the rule that such plants demand service; they do not train for it.

The State makes doctors and lawyers and engineers and farmers in schools; it even makes bookkeepers and stenographers in high schools. It must also now make mechanics, skilled artisans, in schools—trade schools: for not all young people seek the professions or desire to work in commercial establishments. Industrial organization is such that, if the supply of craftsmen of the best quality is not to fail, trade schools must teach them.

The quality and value of the "product" of good trade schools is no longer in question: only those who are not informed now maintain that a trade school can not give a youth an apprenticeship training as valuable and make him as effective as the commercial shop.

Trade schools are criticised because they are expensive; because it costs more to school a boy for a year in one of them than in a school of the ordinary type. A report made to the National Education Association some years ago showed that the cost of high-school and normal training education in many cases approaches or equals the cost of good trade school instruction; and the earning ability of the trade-school graduate far surpasses that of the high-school boy.

But assuming that to educate a boy in a good trade school costs \$300 a year—\$600 for the course of two years—an unskilled laborer, a man without a trade, can earn \$500, maybe \$600, a year; a good mechanic can earn \$800, \$900, \$1,000 a year. The value of a man earning \$500 or \$600 a year, capitalized at 4 per cent, is \$12,500 or \$15,000; the capitalized value of a man who can earn \$800 to \$1,000 is \$20,000 to \$25,000. If by paying out \$600 for two years' schooling, a man's earning power can be raised from \$600 to \$1,000, and his capitalized value from \$15,000 to \$25,000, it looks like a very good investment.

Trade schools are not the solution of all our industry-vocation problems, but they meet the need of an important part of the young people who are leaving our elementary schools at the end of the course, and are meeting that need effectively.

HOW SHOULD THE SCHOOL SYSTEM CONTRIBUTE TO AN INTELLIGENT CHOICE OF VOCATION ON THE PART OF THE PUPIL?

GEORGE PLATT KNOX,

Assistant Superintendent of Schools, St. Louis, Mo.

We must not be content simply to direct the child, find a place for him, and launch him forth on his life work, although this process is easy compared with the better way. Our aim must be to bring the child to understand the real value in his environment and to detect the best opportunities open to him for a life work, and then, so far as possible, lead him to choose intelligently which calling he will follow.

It should not be our aim to determine for the child and his parent what he should do or into what vocation he should enter. Workers in vocational guidance should stand most firmly against the suggestion that we are to force the youth of our land into certain established occupations or trades according to a predetermined schedule or pre-arranged scheme. If we are true to our democratic ideals, we shall not permit any group of men or any authority to dictate what shall be the occupation of the child, nor should we ourselves make such an attempt. For any organized effort whatsoever to say that so many children may be taught a certain trade, or that this child may learn it and his neighbor may not, is usurpation of function which must not be tolerated.

To choose wisely one's vocation, an appreciative knowledge of the immediate environment is essential.

We must help him to understand the vocational opportunities open to him. It is pitiable to what a large extent choice of vocation is made quite in the dark. If we can only give to our youth a fair understanding of the nature of the opportunities open in professional and industrial and commercial lines, we shall make a great advance over present lamentable conditions. We must help the child to understand also the responsibilities involved in his vocational life. We must also urge the value of preparation.

What, and how, should the public school contribute to an intelligent choice of vocation on the part of the pupil? In the organization of the work very large attention must be paid to investigation, both preliminary and continuous. Investigation to be adequate must cover three great fields: The child, his environment, the vocations.

Unorganized social influences, which come under the head of environment, have tremendous weight on the growing child. One scarcely knows where to begin. The street influences, in which all too often the child moves from school until bedtime, vary all the way from legitimate occupation, such as paper selling, down to loafing and gang rowdyism. Then the cheap amusement places claim their great army, and with or without proper supervision our school chil-

dren frequent popular amusements and absorb their not carefully chosen lessons so vividly presented.

Well down in the grades, even in the kindergarten, the life-work interests must be developed in keeping with the advancement of the child. One of the best results which it is hoped will accrue from vocational guidances is that children shall be held longer in school, and better still, with an added interest in their work.

Investigation, organization, cooperation, devotion—these four, and the greatest of these, devotion. The youth of our land call us to ever-renewed effort in their behalf. The wide-open door of opportunity for us public-school workers is to-day labeled "Vocational guidance." Let us thoughtfully, carefully, bravely, and devotedly enter in.

THE EDUCATION OF GIRLS.

L. D. HARVEY,

President of Stout Institute, Menomonie, Wis.

Girls and women constitute one-half the population of the country. Home making is, and will be, the principal vocation for more than 80 per cent of this number. No other vocation can be named which it is absolutely certain that so large a percentage of the population will enter upon. No other vocation is so important for the welfare of the individual, society, and the nation as this. No other demands a wider range of special and general knowledge, nor greater skill in its use in order to achieve success.

Eight million girls and women are wage earners outside the home. Special education is needed for them for increased efficiency, resulting in greater earning capacity and better social and industrial conditions. But it must not be forgotten that for the great majority of these workers their present work is but a matter of temporary choice or necessity, to be given up when opportunity comes to enter the home and assume its responsibilities, and that a majority of them will sooner or later assume these responsibilities, and that without even the beginnings of adequate preparation for their proper discharge.

Two million children are born every year. One-sixth of them die within one year, and one-third of them within five years. A large percentage of this death rate is due to the ignorance of the mother, the home maker. Special education will largely reduce the death rate. The care and nurture of the children are very important parts of the work for the woman of to-morrow, the girl of to-day. At no other period in the life of the individual are wise care and proper nurture so important, and neither is the result of instinct or accident.

Girls can be taught and trained in the public schools, in continuation schools, and in the higher educational institutions for efficiency in this work. Efficiency in the home is the one thing for which every girl should be educated, no matter what other fields her education may cover. It is the one field of educational effort which we have hardly begun to work. We can not enter upon its cultivation too soon, nor can we continue its cultivation too assiduously.

THE EDUCATIVE VALUE OF THE STUDY OF AGRICULTURE.

EARL BARNES.

Lecturer on Educational Topics, Philadelphia, Pa.

Education is everywhere to-day turning from an exclusively intellectual training to the development and discipline of all the individual's powers.

As a subject of study for children, agriculture has an evil record which it must outgrow. But we are not here discussing the evils associated with farming for profit. We are discussing the effects of lessons planned for educational results, not for farm profits, conducted in pleasant school gardens, and on neighboring farms, and stopping short of the empty weariness that makes many of us remember our childhood with pain and regret.

Such a study of agriculture commands a wide range of interests common to children. It satisfies the child's desire for the active, the concrete, and the personal. By pitting one child farmer against another and both against the forces of nature, it affords him the opportunity for emulation and struggle which he craves.

The psychological cycle of education—impressions registered as memories, worked up in associated groups and reasoned sequences, and passed over into appropriate expressions—is repeated again and again in the study of agriculture. And it is only by passing through this cycle again and again that the child is prepared, when he becomes a man, to examine, judge, and act.

The educative value of the study of agriculture is not psychological alone. It also calls into use a very wide range of mental powers, forces measures and comparisons upon the child, and compels him to pass judgment upon his observations and comparisons. It admirably trains him in all the workaday virtues of life, gives scope to his artistic impulses, and offers ample opportunity for cooperation, as well as for emulation.

Yet, as a training for life, agriculture has very definite limits. It trains for persistence, frugality, and justice, but not for generosity, imagination, and sympathy. It teaches boys and girls to work,

but they also need to learn how to play. It trains observation, comparison, and good judgment, but it discourages pure reasoning.

Any farmer who thinks must be a pragmatist, with strong tendencies toward determination. But meantime the children have minds that are rational and that move independently of storms or drought. Hence they should have pure mathematics, logic, and languages.

And on the moral side, nature is carelessly fecund, shamelessly prodigal, or niggardly. Of man's higher justice she knows little; and of his mercy, nothing. From his lesson in agriculture, the child should turn to the Sermon on the Mount, if he should see the whole circle of man's possibilities.

In fact, for all the larger and freer vision of life the child must leave his garden and go to the mountains and the sea; into man's heart through history, biography, and literature; into his dreams through philosophy, music, and the arts.

Our trouble in the past has been that we have tried to take our school children directly into this abstract world of exact thinking and exalted feeling without passing them through the preliminary stages of concrete experience, elemental virtues, and active self-expressions. Lessons in agriculture will give this fundamental training on which all the higher development of the faculties must rest.

THE NEXT STEP IN TEACHING AGRICULTURE IN RURAL SCHOOLS.

E. C. BISHOP,

In charge of Extension Work, State Agricultural College, Ames, Iowa.

There is no common next step in teaching agriculture, although in general the next progressive move for which the most advanced communities are now ready may be indicated. This relates to the better preparation of teachers for agriculture in the rural schools and the high schools. This is the opinion expressed by much the greatest number of educators whose opinions I sought.

The demand for the teaching of agriculture in the communities where the preliminary work has been done is already much greater than the supply of properly prepared teachers. We can not, and would not if we could, stifle the demand for agricultural teachers. We must provide the teachers. The supply of high-school and normal-school teachers of agriculture must come from strong departments of agricultural education in colleges of agriculture. The supply of grade teachers in towns and cities and village high schools must come from normal schools. The supply of teachers for the rural schools must come from the normal training high schools. While we are preparing these needed teachers, we may well be work-

ing out better courses of study in agriculture, not only for rural schools but for all public schools. Agriculture as a subject has not yet settled down into its proper place in the high-school curriculum. A shifting of the entire science course and a better correlation with other branches are the movements under way which will require the second "next step" in the better preparation of teachers for the rural schools.

TYPES OF SPECIAL SCHOOLS IN THE LARGER AMERICAN CITIES.

ANDREW W. EDSON.

Associate Superintendent of Schools, New York, N. Y.

It is a fundamental proposition, though not yet fully recognized in many communities, that every child is entitled to all the education he is capable of receiving. This proposition implies that it is the duty of the State to educate the subnormal, physically handicapped, truant, and incorrigible child as well as the normal child, irrespective of cost. The birthright of every child is a place in the world and a training that will fit him to fill that place as successfully as possible—to be happy, self-respecting, self-supporting.

The argument for the segregation of truants, incorrigibles, and tuberculous children is based upon the protection and good of the other children. This argument will not hold in the case of other special classes.

In the case of mental defectives—and by this term is meant those children who are somewhat subnormal and yet capable of mental improvement (all imbeciles and idiots being institutional cases)—the advantages of providing for their instruction and training in regular public school buildings are many.

The great argument in favor of having the blind and deaf instructed in the regular school buildings is that parents may not be obliged to make a choice for their children between ignorance and institutional life. The training that they get in their intercourse with normal children is of the highest value. When parents understand the matter they invariably prefer the public school to an institution for the education and training of their handicapped children.

It would seem that the child rather than the subject is the center of interest, and rightly so. What a fine thing it would be to have this idea prevail in grades with normal children!

Time will not permit even a summary of the development of trade schools, commercial schools, manual training and technical schools as a part of the public school system.

In any city of 10,000 or more inhabitants there are pupils enough for classes in all the groups named, save possibly epileptics, pupils that should be segregated and be given attention and instruction that will best meet their needs.

For those boys and girls who must leave school at an early age to engage in some line of industry the city should establish vocational schools that will offer practical courses in various lines of industrial activity to all who are 14 years of age without regard to their academic training or to the fact of graduation from any school.

If the board of education can not secure the necessary funds for the support of any of these special activities, there are, thank God, people of means and warm hearts in any community who will respond to any reasonable appeal for financial support of the schools named above. All that is needed is a superintendent of positive ideas, warm heart, good sense.

And in undertaking work along any of these lines, we superintendents should do more than be satisfied to care for the few exceptional children on our hands at the time. We should study causes, methods, treatment, progress, results, and inform the public of the same, as well as pass along our experiences to our neighboring fellow workers.

A DEFINITE PROPAGANDA TO IMPRESS UPON THE AMERICAN MIND THE NECESSITY OF AN EXPANSION OF THE FIELD OF EDUCATION TO PROVIDE AS AMPLE FACILITIES FOR EDUCATION BY WORK AND EDUCATION BY PLAY AS ARE NOW PROVIDED FOR EDUCATION BY STUDY.

M. G. BRUMBAUGH,

Superintendent of Schools, Philadelphia, Pa.

In one city with which I am familiar I found that the wise propaganda is the direct appeal to the people. Some years ago the superintendent called to his assistance a group of unselfish and capable citizens to consider the importance of providing play and recreation for the children of the city. In four years this propaganda secured above 20 playgrounds, maintained summer camps, secured from councils funds for a commission to study and report upon needed play provisions for the city, had an act passed by the assembly creating a board of recreation, and influenced the city government to make provision in its loan items to the amount of \$250,000 for play activities. To-day this city is well on the way to as ample provision for play as it has for study. All this was done by appealing directly to the people, and the people demanded and secured the splendid results indicated.

I take it that some such propaganda for industrial training in the schools will produce equally desired results.

THE SCIENTIFIC STUDY OF ARITHMETIC WORK IN SCHOOL.

J. T. GILES,

Superintendent of Schools, Marion, Ind.

I desire to propose briefly a formula by which any teacher may at any time measure, within reasonable limits, the ability of any school or pupil in the fundamentals of arithmetic and in reasoning power with abstract numbers. The cooperation of a number of superintendents would be necessary to make such a formula valuable for comparison of different schools of the same grade. The object of the formula is to determine the average rate per minute of attempts and the average percentage of accuracy, together with a measure of the variation in the various fundamental operations and in reasoning.

The conditions under which the proposed tests are to be given are as follows:

1. Time for each test, from 4 to 8 minutes.
2. The tests are to be previously written on the blackboard; plainly, in a good light, and covered by a screen or curtain until the tests begin.
3. The tests are to be arranged in rows and columns, each row containing 10 problems, and a sufficient number of rows given to supply more problems than can be worked by any pupil in the time allowed.
4. Pupils write on papers previously prepared in cross sections 10 wide to correspond with the arrangement of problems on the board.
5. All pupils to begin writing, giving answers only, as soon as the curtain is drawn and continue until curtain falls.
6. The numbers composing the test to be drawn by the teacher by lot in the following manner: Fifty strips of paper are prepared of uniform size, on each of which is written at regular intervals the natural series of digits, omitting 0 and 1. These strips are then cut into pieces of uniform size, each piece containing a digit of the series 2-9. These digits are then placed in a bag and drawn out one by one, as needed in formulating the test. This arrangement insures an equal number of each of the digits to draw from. Zero and 1 are omitted to avoid the possibility of chance combinations of exceptional ease of solution. Tests four minutes long and over, formed in this way, would vary but slightly in the degree of difficulty.
7. Where a chance drawing would result in an absurdity, as in the subtraction of a larger from a smaller number, the order of the last two digits drawn should be reversed.
8. The operation to be tested in each exercise is to be explained to the class by the teacher before drawing the curtain. It should also be written above the test as well as indicated by placing the digits in the positions usually adopted for performing the various

operations, i. e., one above the other, with a line below in addition, subtraction, and multiplication, and the usual arrangement for short division, omitting all the operation signs $+$, $-$, \times , \div .

9. Pupils may grade and mark their own papers, which should be checked later by the teacher. From these marks the average or median accomplishment of the school can be quickly obtained and a measure of the variation easily derived.

The subject matter of the proposed tests is as follows:

(1) Addition in single combinations, also double column with two figures in column.

(2) The same arrangement for subtraction.

(3) Multiplication in which both factors are single digits, also when the multiplicand is composed of two digits.

(4) Short division in which the divisor is a single digit and the dividend two, also with three digits in the dividend.

The reasoning tests include (1) three-quantity one-step abstract problems and (2) four-quantity two-step problems.

The formulæ may be expressed by letters which are to be replaced with the digits drawn from the bag. Two letters written together mean a number of two digits, not multiplication as in algebra.

The order in which the reasoning problems are given is also to be determined by lot, two or more sets being used if necessary to provide sufficient problems for the time allowed.

Problems formed from these formulæ by chance drawing and given to classes under the uniform conditions named above are open to the criticism that the results obtained from them are only approximate. It is the belief of the author of this paper that they would be sufficiently accurate for the purpose in hand and that they would have the tremendous advantage of easy availability and of universal application. The schools as well as other business institutions must submit to the test for efficiency.

THE UTILIZATION OF THE SCHOOL PLANT.

WILLIAM WIRT,

Superintendent of Schools, Gary, Ind.

The twentieth-century public school saves the taxpayers money by providing: First, classrooms and libraries, where the child can study books and recite from books; second, playgrounds, gymnasiums, and swimming pools, where the child can play and secure a general physical training; third, shops, gardens, drawing rooms, and laboratories, where the child can work and learn to do efficiently many things by

doing them; fourth, an auditorium, where by lectures, recitals, dramatization, phonograph, player piano, stereopticon lantern, and motion pictures the visual and auditory education of the child may be done efficiently. Four separate and distinct places are provided for each child, but the total per capita cost is not increased fourfold. The per capita cost for classroom study under good conditions is from \$100 to \$200, for play and physical training from \$10 to \$25, for work from \$20 to \$125, for an auditorium from \$10 to \$25. The total per capita cost for the four departments is from \$140 to \$400, or from 40 to 100 per cent greater than the per capita cost for the study and recitation room alone.

But each child can be in only one of the four places at the same time. The new school so arranges the classes that different sets of children are in the four separate departments all of the time. By this plan the new school accommodates four times as many children, and at a per capita cost of \$35 to \$100. By providing facilities for the child's play, work, and recreation, as well as facilities for study, the per capita cost of the school plant is only 35 to 50 per cent that of the traditional study classroom school. There is a corresponding saving in annual maintenance cost. Extra teachers and special supervisors are also eliminated, and the per capita cost for instruction is less than in the exclusively study school.

A much more important feature of the new school is that the children want to go to such a school every day in the year and 8 to 10 hours each day. The universal problem of keeping the children in school has been solved. The school provides a real life, so that the child wants to educate himself at the very moment that he has the opportunity. The play impulse is transformed into a work impulse, so that the real pleasure is experienced in work; the school life creates a need and desire for the academic and cultural work of the school. There is no attempt to remove the difficulties. The supposed distasteful work of the school is not sugar-coated with sentimentalism. The wasted time and the misdirected energy of the street and alley are utilized to awaken ambition, develop initiative, and create power in the child, so that he can find real joy in the mastery of difficulties. The child is busily and actively engaged the year round educating himself.

The worst possible form of an educational plant is a massive brick and stone building with every device perfected for keeping children quiet in a strait-jacket school seat all day long. Children are annihilated in such a school, not educated. The traditional classroom demands the study of textbooks. But real education demands much more. The new school gives the child one-fourth of his time for the formal study of textbooks and for the formal organization of what

he has learned during the remaining three-fourths of his time in real activities. The addition of real activities in a combined workshop, playground, and school makes real, genuine education possible. The school does not dispense with books or culture. It provides for a more efficient use of books and a more genuine and thorough acquisition of culture. The twentieth-century school is planned to assure the highest possible efficiency from buildings, grounds, and equipment and the time and energy of teachers and pupils.

VOCATIONAL GUIDANCE.

MEYER BLOOMFIELD,

Director of the Vocational Bureau, Boston, Mass.

Vocational guidance is not a new thing. What is new about it is the intelligent and energetic effort now going on throughout the country to organize such counsel, information, and safeguards as shall adequately protect the young people of our land during the critical passing from school to work. At the time in life when our children most need watchful care and wise assistance a vast number of our boys and girls leave school in the various grades and take their plunge into working life.

That thousands of children drop out of school, through no economic pressure, to go to work as soon as the law allows we well know. In many cases the parents have had no voice in this decisive step. Indeed, we all know of instances where the parents did not even know that their children had left school and were at work. If any fair number of those so leaving were in occupations where they could develop, learn something, amount to something, matters would not be so serious. But this is not the case. How can untrained and unguided children find their best opportunity? How can they possibly know where they are going to come out in a few years, there being nowhere at hand the information which can spare them years of drifting, waste, and too often tragic demoralization?

What has vocational guidance to suggest as a practical way to cope with this situation? Every intelligent school official, parent, and teacher admits the value of scientific educational and vocational information. There is no argument as to the need of wise and well-informed assistance. In Boston we have made up our minds, first of all, that the public school is the logical starting point for vocational advising. The first step taken was to appoint in each school, some teacher or assistant principal as the vocational adviser for that school. This did not necessarily make one of them. But it fixed a certain responsibility and made a point of contact between our vocational bureau, a philanthropic body, and the teacher. Supple-

menting this work we began to put into booklet form our studies of the typical vocations open to Boston boys. Actual placement is not yet attempted because it will take some years for these principles underlying vocational guidance to find themselves in such common practice that there will be little danger of opening the doors to a new form of child exploitation.

Three picked teachers from the group of counselors are detailed this year to give their time to the needed investigations preparatory to such a vocational-guidance department. One is planning a new organization of the employment-certificate department. The other two are investigating the careers of those who left certain schools five years ago, and those now leaving, and why.

Vocational guidance does not proclaim itself as a solution of all the serious problems confronting the child at work. But it has within its possibilities hitherto unused relationships between the employer and the school. The changes going on in schools are no more significant than are those in the field of employment. We stand with the employer in a demand upon the individual for efficiency; let it be social as well as individual. The employer will ask more and more of the school; the school will ask more and more of the employer. School life and working life must cooperate to make of the student an efficient producer, to make of the efficient producer a responsible consumer and a serviceable citizen.

THE SCHOOLHOUSE AS THE CIVIC AND SOCIAL CENTER OF THE COMMUNITY.

EDWARD J. WARD,

University of Wisconsin, Madison, Wis.

It is only through the use of the school building as a civic center—that is, through its use as a citizens' council chamber, a legislative assembly place, and a final supreme court room—that this common institution can serve America's greatest need in the development of a positive consciousness of democracy.

The responsibility for the use of the schoolhouse for the development of civic capacity can not be shouldered off upon the child. We shall not cease to regard the Government as being located at Washington, at the State capitol, or at the city hall—we shall not get the democratic point of view and sense of responsibility except as we make the schoolhouse the headquarters of an organized citizenship where men frequently assemble to discuss together and with their public servants the problems of democracy.

Second only to the need of developing the citizens' capacity for intelligent government in the great enterprise of America's making

good is the development of a strength-building recreational life, "the capacity to have fun without doing wrong."

The public school as simply the education center for the child does not and can not meet this need, because in its nature it is restrictive. The child in the school is not free to do wrong. The attendance is compulsory. There is little or no training in spontaneous play expression.

On the other hand, the opening of the school building as a center of entertainment to which one is free to come or not as he will, the fostering there of the individual's free self-realization in recreational activities, in musical and dramatic expression, does directly and powerfully meet this need.

And finally, does or can the public school, used simply as an education center for children, develop that social consciousness, that breadth of human sympathy, that sense of solidarity and power of collective action upon which all those who do not accept the doctrine of "the class struggle" base their hope of human progress?

The individualistic training is vitally important, but it is also vitally important that there should be training in, or at least an opportunity for, the development of the community spirit, the social consciousness. The community building used only as an education place for the child is a paternal training place. Used as a gathering place for adults for self-education through discussion, recreation together, and acquaintance, it is a fraternal training place. Both are necessary; each supplements the other, and neither can take the place of the other.

Not only the fighters against political evils, but those who are interested in various specific measures of improvement, are turning to the idea of the establishment of the use of the schoolhouse as a citizenship organization center and civic forum. Cooperation comes also from the religious and moral leaders of the community; from organizations formed to promote general civic, moral, and recreational improvement.

There is also the active indorsement of those who are engaged in various specific forms of public service. In nearly every city and town the public library stands ready to cooperate by making the schoolhouse a neighborhood branch library. This is now done in Grand Rapids and other towns. The cooperation of the Richmond Art Association is back of the movement to make the schoolhouses of that city neighborhood art galleries. The movement to make the schoolhouse a community music center has back of it the interest of such men as Walter Damrosch. The national board of censorship of motion-picture films is promoting the idea of making the schoolhouse the neighborhood motion-picture theater. In some cases organizations cooperate in maintaining special extensions of the use of

schoolhouses. For instance, the Rochester Dental Society maintained the service of the first dental office to be opened in a schoolhouse in that city. Of course the societies formed to promote the public welfare in rural communities are practically all in agreement with the recommendation of the country life commission looking toward community center development in the country.

But the social center movement has its roots deeper than the recognition of its need on the part of students of public problems in America. It is the expression of the great fact that the tide has turned. The dominant force of this century is not centrifugal, but centripetal. We have passed the time of social analysis and are entered upon the time of social synthesis.

THE BOOKMAN IN HIS RELATION TO THE TEXTBOOK PROBLEM.

FRANK A. FITZPATRICK,

Manager American Book Co., Boston, Mass.

The bookman, in his first relation to the schools, exists, directly, to point out and exploit the aims and methods of the author of the textbook that he is trying to sell; indirectly, to help the schools through betterment of methods of teaching. For these purposes he needs opportunity to lay his facts and points before teachers and superintendents; otherwise, it might be months and years before these busy people would discover what this author has to tell them. The cost of textbooks of all description does not exceed 3 per cent of the appropriation for running expenses of the schools. Yet to the pupils in the schools it may be a question of 50 per cent of their time and opportunities to have this problem thoroughly studied and solved, to the end that the tools used by them shall be of the best quality and latest pattern. Therefore, teachers and superintendents must and do take all the time that they can spare from their other duties to acquaint themselves with the contents, methods, and aims of textbooks.

The bookman, coming into contact with the schools at various points, is quick to find excellent teachers, teachers with inventive minds, and to encourage them to express their powers in the line of authorship. Through the bookman a very large number of the best textbooks come to be written and published. He is, therefore, an important factor in the growth and maintenance of good teaching and the consequent uplift in the schools, even though the immediate results of his work are not so visible as those resulting from the efforts of others. Another function of the bookman is to secure and insure a high quality of workmanship in the manufacture of textbooks. He is an important factor in this, because he witnesses in the wear and tear of books in the schools shortcomings in binding and

printing, and learns of defects in methods of treatment from the criticisms of teachers and patrons. These faults he is more anxious to correct than anyone else. This causes him to be alert at all times in the interest of his customers—the schools.

EFFECT ON EDUCATION AND MORALS OF THE MOVING-PICTURE SHOWS.

JOSEPH R. FELK,

Superintendent of Schools, Seward, Nebr.

There is great truth in this assertion of Maeterlinck: "It is the way in which our hours of freedom are spent that determines, as much as war or as labor, the moral worth of a nation." The American people spend about one-fourth as much time in moving-picture shows as is spent in the public schools by children from 15 to 18 years of age. Authorities estimate that at least 25 per cent of those who attend are children. A careful investigation of the attendance in 36 towns and cities of Nebraska shows that 35 per cent of those attending are children under 15 years of age. Children and adults of all classes sit side by side in the dim light of the moving-picture theater. The public school and the moving-picture show seem to be the only truly democratic institutions in the United States.

My general study of the moving-picture problem and the special study of conditions in Nebraska seem to justify these conclusions:

1. The moving-picture show has come to stay and will increase in numbers and influence.
2. The character of the films shown and the general influence of the shows have improved much in the last three years.
3. There are important possibilities in the educational film, but the public motion-picture theater has very little, if any, educational value. The people want to be thrilled and amused, not instructed.
4. The moving-picture show yields a tremendous moral influence that is not generally understood or considered. At present this influence is decidedly detrimental.
5. At present the public motion-picture theater is doing more harm than good, especially in the smaller towns.

STANDARDIZATION OF JANITOR SERVICE.

G. M. WILSON,

Superintendent of Schools, Connersville, Ind.

I desire to defend the thesis that it is possible to fix definite standards and thereby to greatly increase the efficiency of janitorial service. As regards air, we know that each pupil is entitled to 200 cubic

feet of air space, with an inflow and exit of 30 cubic feet of air per minute. It is possible to measure and insist upon this standard of fresh air. We know that foul air is conducive to catarrhal and pulmonary diseases and that contagion spreads under such conditions. We know, on the other hand, that fresh air is very closely related to a fresh mind, to progress and success.

We know that lighting the schoolroom is related to cleaning; that dirty windows mean a reduction in light varying from 10 to 50 per cent. Knowing all of the foregoing, it seems possible to determine a definite standard for lighting and in any particular locality a definite standard for cleaning the windows. It is just as surely known that this will not be secured by a direction to wash the windows "when dirty" or "as often as needed."

As regards humidity, we know that enlarged tonsils, catarrhal diseases, generally nervous and anemic conditions follow the failure properly to humidify the air. We have a definite standard fixing a lower limit as 60 per cent and the upper limit as a relative humidity of 70 per cent. We know the methods by which to secure the proper standard of humidity. So it would seem possible to fix and to carry out a definite standard with regard to humidity.

With reference to the temperature of the schoolroom, we know that a uniform temperature of 68° means from 25 to 50 per cent less coughing and colds in the schoolroom than a temperature of 72°. We know that excessive temperatures mean a weakened condition, rendering the child susceptible to disease and making progress in school work almost impossible.

A schedule of janitor's duties and the requirement for systematic and regular reports would aid in obtaining these results.

Hear the conclusion and summary of the whole matter. First, there is a surprising absence of standards in janitorial service. Second, being physical and manual, almost every phase of janitorial service lends itself readily to standardization. Third, increased efficiency of janitor service and more sanitary conditions for the child follow quickly upon standardization.

RELATIVE COST OF EDUCATION OF HIGH AND ELEMENTARY SCHOOL PUPILS.

E. O. HOLLAND,

Superintendent of Schools, Louisville, Ky.

What proportion of the school revenue should be devoted to the care and instruction of the elementary pupils, and what proportion to the education of secondary pupils?

At one time, not many years ago, a more careful analysis of the relative expenditures of public money devoted to the elementary and the secondary divisions of a public-school system was not of great importance, since these expenditures could be roughly estimated and a fair proportion maintained. But to-day, with the establishment of many special types of schools, the task of maintaining the proper equalization in expenditure is much more difficult and requires a more careful analysis.

This is obvious, since most of the special types of schools recently established care for children that belong to the general elementary field. Consequently there is a decided tendency to maintain all these special schools from the funds that have usually been set aside for the maintenance of the elementary schools alone. Another additional drain on the elementary-school funds which should be considered here is due to the larger enrollment in the grades for which our more effective compulsory-education laws are directly responsible.

So far as I have been able to learn, there is no school system in this country that to-day is spending too much money on its graded schools, but it is not difficult to give the names of several large cities that are spending entirely too large amounts on their secondary schools.

Fortunately, it will not be long until we shall have some definite standards to set up in estimating the relative amount of money that should be spent for elementary and secondary education, and even on the newer phases of public-school work. Dr. Harlan Updegraff, specialist in school administration of the Bureau of Education, has just made a careful study of the expenses of school systems in cities of 30,000 inhabitants and over. After presenting his data, the author raises the question, "What is the range of a proper ratio between average costs of elementary and high schools?" Taking the detailed facts concerning the school expenditures in the 103 cities he studied, Dr. Updegraff states that the best, or at least the most representative school cities—those within the middle 50 per cent of the distribution—spend from \$1.80 to \$2.60 per high-school child, as against \$1 for every child enrolled in the elementary schools. The median city spent \$2.16 upon its high school for every dollar spent on the grades. If this standard could be enforced in many of our leading school cities the question of elimination and retardation would not give us so much concern, for certainly more children would be saved to the schools and advance more rapidly in their work.

DEPARTMENT OF NORMAL SCHOOLS, NATIONAL
EDUCATION ASSOCIATION.

ATTITUDE OF THE NORMAL SCHOOLS TOWARD EDUCATION.

W. J. HAWKINS.

President of State Normal School, Warrensburg, Mo.

Research work can alone solve the problems in education. It is being begun by the schools of education of the universities. These schools of education are grappling with the real problems in education and life that the normal schools have left wholly untouched.

It is my contention that the normal schools are now prepared to enter and should enter this field of work. They have in their faculties men and women who are capable of undertaking such work. The States can devote the public funds to no purposes that more directly concern the people. Everyone engaged, directly or indirectly, in the elementary or the secondary schools knows that much of the work is merely "marking time." It affords neither discipline, information, nor knowledge. The schools of to-day have in the main an intelligent constituency. They know that a large part of the work of the schools unfits rather than fits for life. Only a small per cent of the children can be held in school to complete the elementary course. In our own State only a small fraction over 5 per cent ever enter a high school, and this per cent is not lower than in most other States. Educators know that there is great waste. The schools do not meet the needs of the child in his relations to the times in which he lives. The results are deplored and criticized. The people do not know the remedy. Educators are expected to know it, but they do not. They are getting anxious to find out. The people are pushing them on to find out.

Some years ago Dr. Rice made a severe arraignment of the public schools and gave in many cases expositions showing utter lack of value in things they were doing. He could offer no remedy. Neither could we. Every few months there appears in magazine or newspaper an article that is a severe criticism of present conditions. Many of the criticisms are only too true.

The attitude of the teacher toward education is changing. He is no longer a mere theorist. He has passed that stage. He is becoming

an investigator. He is no longer disposed to follow traditional ways or accept mere opinions; he wants facts.

What are the normal schools going to do about it? In both elementary and secondary schools there must be elimination, integration, and correlation. These can not be done at random or on mere opinion. Facts must be determined. The State normal schools have the burden of this work upon them. The State normal schools are the servants of the people who maintain them. They must meet the people's needs. They must lead rather than follow in the changes demanded in our public-school curriculum. The State normal school is the only school at once in touch with the object and content of education as they affect public-school efficiency. One who has given these problems careful study holds that to enable the prospective teacher to know the value of a course of study the State normal school will need to support a department of research work. In this department and under the direction of a skilled investigator the facts, laws, and principles of education and pedagogy will be discovered and rediscovered. Material in the character of investigators and instructors could be secured from the educational laboratories of our great universities, and thus the normal schools would articulate with these institutions. Material in the shape of mental problems could be secured from the public schools, and the research department would connect with the future field of the prospective teacher. Every State normal school maintains a training and model school department which in a way is a pedagogical laboratory and might as well serve in a degree at least to demonstrate the scientific attitude and method of procedure in determining values of elementary and secondary school problems.

To my mind such an enlargement of the services of the State normal school is not only a possibility but is an obligation. With a hope that this body may see its way to appoint a committee to consider ways and means of entering upon such work, the program for this meeting has been arranged. I am aware that it is a work which will require many years, but I believe it should be undertaken. There can be no question that there is an increasing demand on the part of the public for a critical survey and evaluation of existing methods of child instruction. The lack of mental development evidenced in the lack of information and knowledge on the part of children in elementary and secondary schools is apparent to the mass of the people, and they are giving expression to their dissatisfaction with existing conditions. The people are fully acquainted with the progress that has been made within the past decade in every condition of life, material, moral, and spiritual. They know they have a right to expect for their children conditions of mental development fully in keeping with the times in which they live. They believe that

scientific principles applied in determining values in educative processes will insure the desired conditions. Their confidence in the educators of to-day will not be maintained unless this is done. The State normal schools are closest of all schools to the public pulse, and to them the public looks for a new order of things.

WORK OF THE NORMAL SCHOOL IN THE REORGANIZATION OF THE ELEMENTARY SCHOOL CURRICULUM.

EUGENE W. BOHANNON,

President of State Normal School, Duluth, Minn.

There is a growing conviction among those engaged in the work of normal schools that they should come to a clearer understanding of their duties and opportunities in respect to the curriculum of the elementary school and that they should assume a greater share of responsibility in that connection.

Such demand for a reorganization of the curriculum as exists is mainly in behalf of a more liberal recognition of the value of industrial education and vocational training, a better grounding in the fundamentals of hygienic and sanitary living, and a better opportunity to develop a saner social life. As a preliminary to this, there is, by implication, a demand for the elimination of more or less useless features of existing curricula. The modifications here suggested should be regarded as favoring the children who will never have any other school experience than may be had in the elementary school, but as none the less desirable for those who expect to have a more extended and varied school life. These results, however, should be a consequence, rather than the main object, of the work done; and so they will be when the school and other experience are properly integrated; when the completion of the work of the school is only nominally the commencement of life.

The equipment of the teacher is the primary consideration. The course of study must be an expression of her conception of the course to be pursued rather than that she be regarded as an instrument for the administration of the course.

Because it is the special function of normal schools to prepare teachers of all of the children in the elementary schools, they must thoroughly understand their needs. It should be an invariable requirement that those who teach in them have that training and experience which combine to make such knowledge a necessary result. It would be a mean and ignoble conception of the function of the normal school that limits it to the duty of supplying teachers trained to meet a demand which the school had neither the ability to appreciate nor any share in defining and interpreting.

It does not matter so much, as we sometimes think, whether the curriculum provides for this or that as it does that the teacher be a living embodiment of the things which should be included in the curriculum. If they are in the teacher they will be in the school, and if they are not in the teacher they will not be in the school, even though they are in the course of study. If it were as easy to make reforms in the work as in the courses of study, the solution would be easy enough.

The substance of the curriculum should be an inherent part of the knowledge and experience gained at the normal school and should be so thoroughly integrated with them as to make any special effort at adjustment unnecessary. For that reason the curriculum of the normal school itself is of the greatest consequence. It is incumbent upon us to devise more effective ways and means for cooperating with the several agencies which prescribe the work in the elementary school.

PLACE OF THE NORMAL SCHOOL IN AGRICULTURAL EDUCATION.

E. E. BALCOMB,

*Department of Agricultural Education, State Normal and Industrial College,
Greensboro, N. C.*

The movement for agricultural education is broader and more comprehensive than the mere adding of a recitation once a day from a textbook telling in a brief way how soil is formed, how plants should be raised, and giving a few pictures of fancy poultry and high-bred stock.

If the subject of agriculture is mentioned at all among the older and more time-honored studies of the curriculum, it is in a slighting and apologetic way. Emphasis is laid on studying, not on thinking and observing—especially outside of the schoolhouse. According to this conception, knowledge must be something that can be measured by the textbooks. But as a matter of fact agricultural education is more than a collection of uninteresting facts. It is an attitude, it is a feeling, it is a different point of view, a new method of presentation.

Every normal school should have a sharp lookout for teachers who are doing excellent work in the rural schools; those teachers who are not merely doing good teaching, but who are really getting hold of the people and raising the standard of living in the community where they teach. There are a number of agencies by which this may be done.

There is no reason why proper selection and encouragement in the field of teaching should not give us many more excellent teachers of agriculture and rural life in general. Teachers who come from

rural schools should take training in normal schools which have an environment that will encourage them and stimulate their ambition for this kind of teaching. One difficulty is that most normal schools have an atmosphere which not only does not encourage teaching in this field, but makes teachers feel that it is a matter of social standing as well as finance to teach in the city schools. It is like a very large State university which I know, where all the students in the agricultural department are referred to as being in the "cow college." The result is that while many students enter this department, most of them before finishing the four years' course have transferred to some other department.

The agricultural education for schools is more than the getting of new facts, more than the adding of a new study to the curriculum. Agriculture as studied in the agricultural colleges has three objects: First, that of discovering new truths and new methods of attack on old problems; second, that of presenting these in such a way that farmers (the adult individuals in the rural communities) will be induced to heed them; it includes, of course, training for the wives and mothers; third, that of spending much time and effort in making the farmer familiar with the facts and methods that are already well established. The chief battle is against ignorance. This battle the teacher and the normal school should be prepared to help prevent in the next generation. The children they train should be able and anxious to apply all knowledge of common methods of farming as fast as the agricultural college puts its stamp of approval on them.

Agricultural education for schools differs from that of the agricultural college in that it does not attempt to discover new truths, does not try to add to the sum total of human knowledge, but only endeavors to teach the young people the things that have been demonstrated, and means of applying this knowledge. This knowledge is intended for the children, the immature, and not for the adults. Agricultural education is preventive medicine, while agricultural college work is curative. If agricultural education can be properly taught in all public schools, there will be a dearth in the crop of ignorant farmers. The agricultural college can then devote its energies to discovering new truths, putting the frontier of knowledge further into the vast wilderness of the unknown, well knowing that they will have an army of scientific farmers behind them eager to apply each new discovery and hold every foot of advance ground the colleges have been able to take.

But how can the students of the normal schools be prepared to do this unless they have some means of getting this knowledge at first hand? This calls for equipment, and fearless, well-prepared teachers in the normal schools. A few are doing this, but behold the lack of equipment and the infantile efforts of the vast majority of the

normal schools. They have four brick walls, the common desks, children saturated with the old ideas of education, a textbook written by a college professor who never taught a day in the rural schools, and a teacher who does not know a Duroc from a Plymouth Rock. In striking contrast to this is the equipment and work of such normal schools as the Kirksville (Mo.) Normal.

But agricultural education as it should be presented by the normal schools, and as it is taught by the best teachers, is a point of view, a method of attack, an attitude toward life. It means that all studies should be taught in a different manner. It should enable the children to live a fuller, richer, nobler life. It should show them that mastering problems of raising crops, baking bread, and sewing garments is just as truly educational as the solving of a problem in algebra or learning a conjugation in grammar. In addition to having an equal educational and cultural value, it also has a body of facts that possess a utilitarian value, which will enable the children of the rural communities to live a life on a higher materialistic plane. They will, as a result of this knowledge, get better returns from the soil, have more time for culture and self-improvement, will be better prepared to compete with the other classes, and get a "square deal."

In the training of teachers of agriculture at a State normal school, I would emphasize these points:

First. Candidates should be selected who have a natural liking and aptitude for rural life.

Second. The attitude of mind which the normal students should be taught to impart to the future pupils is that of contentment with rural life, rather than a desire for urban life. Moreover, they must be brought to realize that the studies of immediate value in human service are as good as any other studies for mental discipline and culture.

Third. In teaching the sciences entering into a study of agriculture, the normal school should not give the subject for its own sake, but for the sake of its bearing on the course. Thus, for practical purposes botany becomes a division of farm and garden crops, and biology turns itself into a concrete study of practical bacteriology.

Fourth. Less time should be devoted to the dead languages and more to preparation for practical living.

Fifth. Training should be given for leadership in rural affairs.

Sixth. A rural practice school is necessary.

Seventh. The entrance requirements should be so adjusted that those with rural tastes and training have an opportunity to pass which is equal to that of the city-bred girl.

PLACE OF THE STATE NORMAL SCHOOL IN AGRICULTURAL EDUCATION.

W. M. STEWART,

Dean of School of Education, University of Utah, Salt Lake City.

The point of view of social efficiency as the end of education has brought about a reconstruction of the school curriculum. Disciplinary subjects are replaced by the practical. The function of the school is determined by the needs of society in the process of its evolutionary adjustment. What society and the individual need that can be best done in the school must be done there, no matter what be the traditions of the past. In response to this ideal, the school to-day, as never before, is studying its own particular social setting with the view of its own individual adjustment; so the school, for the first time in history, is assuming a really scientific attitude.

The problem under discussion is to find the place of agriculture in the new scheme of education and especially with respect to the professional training of the teacher. If agriculture has an important place in the school curriculum, it follows without further argument that it has a similar importance in the curriculum of the normal school or teachers' college.

Using agriculture in its broadest sense as embracing, especially in the elementary curriculum, nature study, I am ready to make the assertion that with its practical activities it is fundamental, and hence extremely rich in educational resource. The sociological expert tells us that the present-day menace to our civilization, which seriously impedes our progress and perhaps threatens our downfall, is the instability of the family. I am ready to make the assertion that no subject can do more for the stability of the home than agriculture in the schools. I do not mean the rural schools alone, but also those of the city. I regard agricultural training as fundamental in the common schools and needed by every child. Then, if my contention is correct, and I challenge proof of the contrary, it is the special and necessary function of the school that is training teachers to teach this subject in some of its phases to every prospective teacher.

I am ready to concede that there are difficulties in the way which may make it for the present impracticable to teach agriculture in some normal schools and teachers' colleges, and that probably the agricultural colleges will need temporarily to train teachers of agriculture. This, however, will be necessary only in the training of high-school teachers of agriculture, domestic science, and domestic art. But ultimately and ideally the agricultural teachers, as well as all others, must be trained in a professional school for teachers. It was once held by many, and especially by high school and university

people, that to know a subject was to be able to teach it, but this idea is now only a tradition. The constantly increasing complexity of education, the social function of the school, and its relation to the complex problems of our civilization make the professional training of the teacher imperative; no amateur can be trusted to do so important and difficult a work. It may readily be shown that it will be vastly more economical to place in the teachers' college the agricultural subjects necessary for the training of teachers than to duplicate the normal schools in agricultural colleges.

Teaching can only be made more efficient by teaching in terms of the child's life and interests. We are coming to realize that education should grow out of the lives of the people and back into their lives. Practical nature study aims to place the child in a sympathetic relation with his environment and give him a broader basis of knowledge whereby he may interpret all his actions. Nature study should create a sympathy for the industrial activities of the country. In brief, our sole aim is to give a child a training which will fit him for life in its broadest sense. We are not believers in the trade school; but we do believe that this practical work can not only be done along with the fundamentals, but that it will strengthen them.

A PLAN OF NORMAL SCHOOL STATISTICS.

HOMER H. SEERLEY.

President Iowa State Teachers' College, Cedar Falls, Iowa.

State normal schools are now more numerous and probably more essential and more appreciated than any other kind of State educational institutions. They deal with vital problems, they return immediate results, and they are more definitely responsive to public opinion than other educational movements can be. Their organization is simple, their support is direct, their management is executive in most instances, and their conception of their province is definite and distinct. They seem to be prevented from having an institutional conception of education, despite their standards of excellence, and they are not likely to have a national status or to seek national recognition. With all their popularity, with all their practicality, with all their success, with all their prospects and privileges, the majority of them do not seem to seek to enlarge their importance as public, organized efforts for improving civilization, and they are therefore not aiming to develop their field of activity, or to increase their usefulness, or to demand their part in the national and State opportunities that all other higher education inherits.

The efforts that have been made to pass S. 3 (the Page Bill) and its predecessors, so as to include the State normal schools as a factor in

the great national movement for a sensible, vocational education for public-school teachers, have not been as productive of results as would have been the case were these schools as national as are the State universities and the State agricultural and mechanical colleges.

A proper study of statistics, a proper classification of organized efforts, a proper conception of what is done everywhere in the endeavor to train and to educate teachers, must enlarge the horizon of these schools, must compel them to recognize their chances, must urge them to enlarge their field of usefulness and power, and must qualify them to enter upon activities and possibilities that would enable them to participate in the remarkable development that the United States is receiving. They would thus keep pace with the progress and the largeness that these days of intense thought and application permit, and continuous development and improvement would be the result. Without this view of conditions and undertakings, without this knowledge of what is actually going on elsewhere, without this touch with comparative standards and undertakings, without this chance to keep abreast with the times, this kind of educational work will remain provincial, theoretical, and indeterminate, when its very opportunities indicate that it ought to be the broadest, the largest, and the best that the age affords.

With these reflections in mind four types of normal schools may be distinguished. A proposed plan of statistics would include figures on income, expenditure, faculty, students, training department, graduating class, per capita expense of instruction, course of study, library, and plant and equipment.

These points for statistical information would not be considered as applying very satisfactorily or generically to all the different classes of State normal schools. There remain, therefore, several solutions to the problems involved if the work proposed is at all worth doing. A few of these are suggested:

1. Classify the State normal schools on some acceptable basis of differentiation, and then work out a system of suitable and reasonable statistics for each of the classes designated.
2. Adopt a very few points that seem to be in common and be satisfied with the very meager information thus given as all that can be deservedly said and recorded concerning this kind of State education.
3. Drop the entire proposition as of not sufficient importance and value to deserve either attention or interest, let alone the large amount of committee and personal work that such an investigation must regularly and systematically demand of this department.

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION.

CLASSIFICATION OF PLANS FOR INDUSTRIAL TRAINING.

FRANK MITCHELL LEAVITT.

Associate Professor of Industrial Education, the University of Chicago, Ill.

Perhaps nothing serves better to distinguish all vocational schools from our traditional educational institutions than the singleness of purpose with which they are administered, and the classification here made is based on the fundamental purposes of the different types of schools studied.

In attempting to meet the very definite demand for training which is motivated by vocational purpose, two rather distinct types of endeavor are to be observed--one within the present school system and the other in a measure outside of, if parallel to, the existing schools. Generally speaking, the prevocational schools and vocational high schools fall under the first classification, while the separate industrial schools and the trade schools come under the second.

The purpose of prevocational industrial training in the seventh and eighth grades seems to be to secure the revision of the course of study in the upper elementary grades, both as to content and method, in order that the work given therein may appeal to those children whose vocational interests are drawing them away from the school altogether, and at a time when their education is extremely limited and fragmentary.

While intermediate, independent, or separate industrial schools have much in common with the prevocational schools, there is one radical difference. They do not commonly prepare their pupils for high schools.

The vocational high school retains many if not most of the features of the traditional high school, giving, however, the maximum amount of training in vocational subjects possible without jeopardizing the pupil's opportunity for advanced training in higher institutions of learning.

Neither the prevocational school, the separate industrial school, nor the vocational high school claims to teach a trade. The trade school, generally speaking, does not claim to teach anything else.

The part-time cooperative plan recognizes the fact that one may be educated by his work as well as for his work, and further recognizes that there is nothing more unfortunate in our social order than the necessity which confronts so many children of choosing between *all school* and *all work* at an early age.

The plan contemplates an arrangement of school program and shop employment whereby the pupil gains practical shop experience by working for an employer and systematic instruction in the science and art of the industry in the courses offered in the school. The pupils work in the school and in the shop during alternate and equal periods, usually weekly, and receive wages from their employers while in the shop.

The continuation school also depends upon cooperation between the employer and the school. A minimum amount of time, however, is devoted to the school work, generally from four to eight hours a week.

The cooperative schools organized on the half-time basis are planned for those who are still in the school system but who are feeling the pressure of economic conditions or the urge of real life. The continuation school, on the other hand, is planned for those outside of the system, and already engaged in gainful occupations.

Vocational guidance is a necessary corollary of vocational education, and the ultimate success of either one will depend upon the ability of the school system to furnish some measure of the other.

PREVOCATIONAL INDUSTRIAL TRAINING IN THE SEVENTH AND EIGHTH GRADES.

GEORGE A. MIRICK,

Acting Superintendent of Schools, Indianapolis, Ind.

Different policies in prevocational work in the upper grammar-school grades are applied in Indianapolis, Boston, Cleveland, St. Paul, and Newark. In some particulars all the schools under consideration are in agreement. One point of agreement is in the "call" for the industrial activity, or to put it differently, in the schoolman's motive for introducing industrial activities into elementary-school grades. The most fundamental motive appears to lie in the unmet need of the boy and girl who does not or can not find education and culture (assuming that these two words are not synonymous) through and by books alone.

A second point of agreement is in the choice of material for educational purposes. The uniform reasoning seems to have been this:

"If a child's mind does not react by dealing with the abstract and the symbol, let us try the reality."

A third point of agreement is the introduction of a secondary aim in elementary training.

A fourth point of agreement lies in the conviction that the book is indispensable in any form of elementary training, that at least half time should be given to the book, but that the book and the activity should be so related as to vitalize each other.

A fifth point of agreement relates to method and to quality of industrial product. School practice should be "shop practice" as far as is practicable. However, there appears to be a universal conviction that in this elementary field the educational values must always dominate rather than the industrial values.

A sixth point of agreement is that the elementary industrial courses must be so planned that a boy or girl completing them may at his option enter advanced courses of study or enter industrial life.

A seventh point of agreement is that these children need educational or vocational guidance when they pass out from the elementary course and that they need opportunities for continued education if they enter the industries.

Among the points at which there is not exact agreement is a difference in the degree of vocational emphasis. It would appear that the cost will increase with the vocational emphasis, for this emphasis carries with it a larger variety of activities, a more varied and complete mechanical equipment, and more highly trained and more thoroughly experienced teachers.

DEDUCTIONS.

The elementary industrial plan of education requires for its success a school building constructed for it. A conventional school-house will not do. Each activity should have its room or rooms built for that particular activity.

"When a manual activity becomes merely manual labor, it ceases to be an educating activity. At this point a labor-saving tool or machine must be introduced." If this statement is, as it appears to be, a principle inherent in this plan of education, it will determine the amount and variety of machinery that must be made a part of shop equipment.

"A boy between the ages of 14 years and 18 years is potentially at his best as a mechanic. That is, during these years he can, with a minimum amount of training, turn out a finer mechanical product than he can in later life." If this shall be found to be a principle, it can not but profoundly influence all educational practice in the upper elementary and lower high-school grades.

CONCLUSIONS.

The problems involved in educating girls by the elementary industrial plan are not as yet either so successfully worked out or so fully worked out as are those for boys.

The least successful part of the plan is the interrelation of the book and the activity.

It is becoming evident that the influence of the industrial plan of elementary education is destined to be considerable on both "manual training" in general and on all elementary education. This form of education will not eliminate all the "failures" from the schools, but it is diminishing their number.

THE SEPARATE OR INDEPENDENT INDUSTRIAL SCHOOL.

M. W. MURRAY,

Director of Industrial Education, Newton, Mass.

The development of the independent industrial school is due to a broadening educational policy which recognizes the right of every pupil to the kind of training best suited to his individual needs. We have come to realize that a scheme of education which is intended primarily for the select few who enter the professions will not educate effectively all children, even if they were compelled to remain in school.

It is the intent of the Massachusetts law to promote by State aid the development of a new type of school which in fitting for wage-earning occupations shall be unhampered by the practices and methods of the regular public schools.

This school aims first to discover what its pupils are capable of doing and what line of trade work, if any, they are fitted to pursue. The aim is to offer a four-year course, three years in the school and the fourth in the trade, under the supervision of the school.

In the Newton Independent Industrial School the shopwork includes courses in carpentry, cabinetmaking, pattern making, printing, machine-shop practice, and electrical work. The shopwork forms a core for the teaching of drawing, English, mathematics, science, history, and civics, and makes it possible for pupils to see the real use of much of the bookwork. The shopwork is all conducted in the way in which similar work in commercial life would be carried on.

The aim of the work in English is to enable the pupil to express himself clearly, adequately, and in correct English, both orally and in writing; to develop his vocabulary of industrial terms, and the ability to consult sources of information along mechanical lines, and to organize working facts into convenient and useful form; to ac-

quaint him with the rapidly developing literature of the modern industrial world; and to cultivate the habit of reading good books.

Such a subject as machine-shop practice, through its shop calculations and shop costs, offers an opportunity to teach, with an absolute application to what the boys are doing, all the practical mathematics which the average man will ever need to know or use. This school is reaching those who are hopelessly lost to other types of schools.

The most difficult problem in the industrial schools is to find teachers who are capable of carrying out the program outlined in part above. On account of the expense of the building and its equipment, starting these schools has been difficult, and it has been the almost universal practice to take buildings which have been discarded for regular school purposes and to adapt them to the needs of the industrial school. If these schools are to be a success, they must receive adequate housing and equipment.

THE SEPARATE TECHNICAL HIGH SCHOOL.

JAMES F. BARKER.

Principal of the East Technical High School, Cleveland, Ohio.

The schools that could be included under this title would be only those which have a course of study where English, mathematics, science, shopwork, and drawing are the fundamentals, and where the foreign languages and history play less important parts. Of schools of this nature there are comparatively few in the United States.

One of the complaints made against the technical high school has been that it is failing in its purpose of supplying the industrial unit for work at the trade and is inspiring boys to seek an engineering education. Doubtless this provision in the course of study is wise to just that extent. The technical high school can not and never should hope to supply the trade with its workmen, but should fit boys to enter industrial callings and at the same time should include technical preparation.

To many pupils, in fact, to probably 75 per cent of those who enter the technical high schools, the opportunity to get further education is not possible, due largely to the lack of financial means. These schools must then be the finishing school for most of the boys and girls, and to this end the trade instruction is useful.

It rarely happens that manufacturers can find foremen or shop superintendents who have suitable training for their positions, and in many instances our best men are foreign trained. There are two reasons back of this: One is the inability of the manufacturers to offer the proper training to their men and the other is the lack of proper schools. We can not, therefore, draw our teachers from the

shops and factories, except in rare instances. One of the functions of the technical schools should be to train the men who, with adequate additional shop experience, can in turn take the positions in the technical high schools, or who will be fitted to organize the work of the grammar grades. Technical schools are now suffering as much from a lack of trained men for the teaching staff as from all other causes.

In recastulation, these points should be noted:

(a) Proper training must be available in grammar grades—first, for the trades; second, for the academic school; and, third, for the separate technical high school.

(b) Proper training must be available in the separate technical high school for—first, the trade foremanship; second, for high-school engineering courses and technical normal courses; and, third, for technical colleges.

These are to be some of the developments in the larger cities in public secondary education in the immediate future.

INDUSTRIAL TRAINING IN THE COSMOPOLITAN HIGH SCHOOLS.

H. B. WILSON,

Superintendent of Schools, Decatur, Ill.

A cosmopolitan high school may be defined, from the vocational standpoint, as a high school which provides various kinds of vocational education. In such a school are combined the advantages which some communities seek to provide by establishing special types of high schools. Such a school offers many courses, and trains for many vocations in one plant and under one management. Ideally, such a school will provide equal or proportional representation of all types of vocations which the children of a given community may wish to pursue.

The problem of the public schools in providing industrial training is essentially one of producing skilled labor. The school must seek to render efficient and intelligent all those who are to serve society through participation in the industries. It should proceed in the solution of this problem, however, consciously guided by the fact that skilled labor is of two widely different kinds—that which depends mainly on habit and that which depends mainly upon initiative. Between the extremes of these types of labor we find a large variety of ability with various combinations of habitual action and initiative, of course.

No public high school which I have been able to study attempts to provide industrial training for the first type of laborer. The school may do much, to be sure, in rendering these laborers indus-

trially intelligent, but the training essential in securing this end is largely of the type which emphasizes the development of initiative rather than habitual action.

THE PUBLIC-TRADE SCHOOL.

CHARLES F. PERRY.

Supervisor of Industrial Education, Public Schools, Milwaukee, Wis.

Two basic questions propounded to the trade school are: Can a boy serve a successful apprenticeship in a trade school? If so, what does it cost the taxpayer? These seem to be the main questions. Those who are interested in educational work have many more questions in detail to ask.

The cost of the high-school student per year in Milwaukee is approximately \$60, or \$240 for his four-year course. The cost of the trade-school graduate is approximately twice this amount for two years, but the trade-school graduate is worth, on leaving school, between three and four times the amount of the high-school graduate who has not had special vocational training in his secondary school work.

The city which is fortunate enough to have a municipal trade school in its public-school system can hold before every boy, ere he reaches the age of 14, the incentive to remain in school and make the most of himself while he has the opportunity.

The best place for trade schools is in the public-school system, and its specific place in that system is where it can help directly and indirectly the boys and girls who feel the desire or need to go to work, and its influence should be available when that desire or need presents itself. Its strategic position can be used as a power for vocational inspiration equal to, if not greater than, its opportunity for actual trade teaching.

THE PART-TIME COOPERATIVE PLAN OF INDUSTRIAL EDUCATION.

ADELBERT L. SAFFORD.

Originator of the Beverly (Mass.) Cooperative, Half-time Public Industrial School; now Superintendent of Schools, Chelsea, Mass.

In all industrial education there are several parties in interest—the manufacturer, the workmen, the pupils, and the public. For the purposes of our discussion, the interest of the pupils may be considered as part of the interest of the public. In the public cooperative industrial school the three principal parties in interest may become active participants in the management of the school. It is in the harmonizing and fulfilling of the legitimate aspirations of these

three parties in interest that the cooperative school encounters its greatest difficulties and achieves its greatest excellence.

The parties in interest have much in common, but each places greatest stress on some feature that beyond a certain point becomes antagonistic or prejudicial to the interests of the others.

In the management of such a school the manufacturer, the workmen, and the public should all be represented, but the degree of success of the administration will be largely determined by the extent to which they merge their interests into one control for both factory work and school work.

In order to show the relation of the shopwork of the cooperative school to that of other schools it is convenient to classify the various forms according to the purposes they serve, as: (a) Cultural, (b) preliminary trade training, (c) trade training.

While the cooperative school plan has its elements of danger, nevertheless it possesses advantages which can not be claimed to an equal extent for any other type. One week in the school followed by one week in the factory is the usual plan of alternation.

Although continuation schools were originally intended to continue the regular elementary-school subjects, they are now chiefly devoted to teaching the technical and theoretical subjects required in the trades practiced. The plan of devoting the cooperative school wholly to the acquisition of technical knowledge and trade efficiency was greatly encouraged by the example of the apprenticeship schools maintained by the large corporations, by the demands of manufacturers not maintaining their own schools, and by the desires of the pupils themselves who hoped to increase their wages by this study. The philanthropic trade schools have also for the most part limited themselves to satisfying the demands of the trade, and give no separate place on the program for the cultivation of personal, social, and civic obligations.

May not the love of creative work that enables youths to take so kindly to shopwork serve to motivate the personal, social, and civic betterment subjects? May we not with profit change our requirements from memorizing books to right actions; from book civics to intelligent participation in civic life; from formal physiology to hygienic living; from economics to social service; from grammar and composition to shop records and business and social documents? We need less formality, but more concentration, effort, and self-control.

Making an honest living contains the elements of living an honest life. Industrial efficiency, functioning in the person, implies such fundamental virtues as diligence, responsibility, self-control, and co-operation. Industry and right relations with fellow-workmen are

an excellent approach to right relations to the community and the State.

Finally, there is a culture resulting from doing and being, more vital than the culture derived from books alone. Industrial education makes this vital culture possible in greater or less degree to a class of individuals for the most part hopelessly out of reach of the traditional streams of liberal education.

THE CINCINNATI CONTINUATION SCHOOLS.

PLINY JOHNSTON,

Woodward High School, Cincinnati, Ohio.

A certain sanitarium gave a test for insanity which it always claimed was absolutely conclusive. It was very simple. The patient was given a large dipper and was set to emptying a tub of water set under a hydrant with the water turned on. If the patient continued trying to empty the tub without turning the water off he was declared to be hopelessly insane. We, as schoolmen, are undertaking a similar task in our battle against ignorance, as long as we allow a stream of ignorant children to leave our schools, simply because they are 14 years old.

The continuation school retards the flow. The necessity of a continuation school for men is not as great as the necessity of a continuation school for women. No one who has ever engaged in any philanthropic work for girls in our large cities wonders why girls go to the bad; the wonder rather is how any of them ever remain clean. It is said that the New York shopgirl meets only one pure-minded woman in her whole city life, and that is her Sunday-school teacher. Since the Sunday-school teacher seems to be no longer a factor in the shopgirl's life, there is absolutely no influence, except accidental, that works for her good.

The age of 14 to 16, inclusive, is recognized as the period of the rapid development of interest in self and life. There is need for care at this age in respect to the social life, and the reason that the high school in some of its phases is a most bitter disappointment is because of the lack of this social life. At this age the question of what the children learn is not as important as what they get by association, inference, and intuition. These young folks are put to automatic work in the shops. Their employers have learned by long experience that young persons at this age, do not think—at least about the interests of their employer or the care of his machinery. Thus they are set to work at machines where the only evidence of brains is found in the inventor. Day after day they do the same

thing, the same way, and watch the clock till escaping time comes. Fatigue toxin has poisoned their bodies and their minds. The relief from that toxin is sought in amusement, and the amusement at hand is not the right sort. To meet these various necessities Cincinnati has developed a system of continuation schools.

VOCATIONAL GUIDANCE.

MEYER BLOOMF. LD.

Director of the Vocation Bureau of Boston, Mass.

What has given rise to the nation-wide interest in the subject of vocational guidance? Advising with young people as to their future is not a new thing. Reflection must convince one that personal and individual effort, however invaluable, can not deal adequately with modern conditions. Tenement homes, a large immigrant population as yet unacquainted with the possibilities of the new country, large school classes, and complex conditions of commerce and industry give rise to a situation which, besides friendly sentiment, needs facts, organization, and even science to understand and cope with.

Whose business is it to follow up the results of the transition from school to work? Whose business is it to audit our social accounts and discover how far our costly enterprises in education, the pain, the thought, the skill, and the sacrifice we put forth with the growing generation are well or ill invested in the field of occupation? The higher training schools are as profoundly concerned in this problem as are the elementary schools. The well-to-do are no less affected than the poor. Until society faces the question of the life careers of its youth, the present vocational anarchy will continue to beset the young work seekers.

Vocational guidance presents itself as a community problem. To lessen the social waste, to furnish necessary information about various occupations and their advantages and disadvantages and the training necessary for efficiency in them, to broaden the range of choice, and to deepen the "life-career motive" in education and in employment, the vocation bureau was organized in Boston, the first of the kind in the country. The main interest of the bureau is not the employment of youth, however favorable and pleasurable the opportunity, but its best social investment. Underlying all its endeavors is the realization that a longer period in school and continued training are fundamental to achievement in every desirable occupation. In accordance with this plan 117 teachers were appointed to serve as vocational counselors, and the opportunities open to boys and girls were fully discussed in a course of lectures and discussions conducted by the vocational director.

Vocational guidance is a service in behalf of efficient democracy; for work and school must join hands in fitting the future citizen for the highest and best achievements.

TRAINING OF TEACHERS FOR SECONDARY COURSES IN AGRICULTURE.

A. C. MONAHAN,

Specialist in Agricultural Education, United States Bureau of Education.

Some idea of the present demand for instructors qualified to teach agriculture in secondary schools may be derived from the fact that in the United States at present there are over a hundred special agricultural schools, located in 17 different States, supported in whole or in part by the States, and that agriculture was taught in 1910 as a separate subject in more or less complete courses to over 37,000 pupils in 1,800 public and 140 private high schools, according to the reports submitted by these schools to the Bureau of Education.

Of these special agricultural schools and the 2,000 public and private high schools teaching agriculture only a very few besides the institutions giving four-year courses in the subject have instructors with a college or normal-school training in scientific agriculture, and a large percentage of the active teachers with such training have had no training in psychology or pedagogy. Probably no one factor has had greater influence in retarding the introduction of substantial courses in agriculture in all high schools whose pupils are drawn in large numbers from farming districts than the shortage of properly qualified teachers.

It will be several years before the supply of men available as instructors in agriculture will be sufficient to fill the demand. Although the salaries paid are from 50 to 100 per cent higher than those paid for instructors in other subjects in secondary schools, the State colleges of agriculture are finding difficulty in persuading men to qualify specially for teaching, because even these salaries are not equal to those paid in the agricultural industries to the graduates of these institutions. It is important, however, that properly trained men be obtained. Agriculture as a high-school science has not yet been developed into good pedagogical form, and until such development has taken place a higher grade teacher is needed for the agricultural subjects than for any other subject in the high-school curriculum.

Men for this work need a liberal education in the general cultural subjects and special training: First, in the physical and natural sciences, particularly in their relation to the science and art of agriculture; second, in technical and practical agriculture and farm practice; third, in rural sociology and agricultural economics; fourth, in

general psychology and pedagogy; fifth, in special agricultural pedagogy, including the history of agricultural and industrial education, the place and purpose of agriculture in the high school, the function of the agricultural high school, special methods of teaching agriculture, and other similar aspects of agricultural teaching. The opportunity for such preparation in whole or in part is offered by 36 of the 50 State colleges of agriculture.

**THE VOCATIONAL AGRICULTURAL SCHOOL: WITH SPECIAL EMPHASIS
ON PART-TIME WORK IN AGRICULTURE.**

R. W. STIMSON,

Agent for Agricultural Education, Board of Education of Massachusetts.

Vocational education in the usage of the State of Massachusetts includes all forms of specialized education the controlling purposes of which are to fit for useful occupations. Agricultural education, as a phase of this subject, means that form of vocational education which fits for the occupations connected with the tillage of the soil, the care of domestic animals, forestry, and other wage-earning or productive work on the farm.

Productive work of a high order of efficiency is coming to be considered the real test of all systems of vocational education of secondary grade. Particularly in vocational agricultural education it is coming to be accepted that the training must be such as to develop both skill and managerial ability. The competent farmer must be not only expert in the varied technique of his calling, but also a sound and progressive business manager.

Neither skill nor business ability can be learned from books alone, nor merely from observation of the work and management of others. Both require active participation during the learning period in productive farming operations of real economic or commercial importance.

Perhaps the best use to which an agricultural school, large or small, can put its own land and equipment is that of demonstration and experiment. Most schools appear to have adopted this view.

The problem, then, of providing for actual participation, both as manager and as worker, in productive farming, simultaneously with his classroom instruction, on the part of the boy in the agricultural school, may fairly be looked upon as the most startling and stupendous problem in this ~~most~~ field of vocational education. How shall it be solved?

It is believed that home farm work, supervised by the school, where conditions are at all like those in Massachusetts, might well be sub-

stituted as far as possible for the present methods of much work, little work, or no work at all of a productive and managerial nature, now found in connection with vocational agricultural school training; and that the project method of bringing agricultural science immediately to bear on actual farm practice, in giving commercial agricultural enterprises conducted by the boys themselves, is a promising solution of our most pressing problem in this field of vocational training. Most boys, like most men, learn best by being told and shown on the field of action. This method offers the boy, all too eager to quit school for work on reaching his fourteenth birthday, a strong incentive to continue in school; because it bids fair to make him an earner while still a learner. Boys like to feel that as members of the family they are at least able to pay their own way.

STATE-AIDED DEPARTMENTS OF AGRICULTURE IN PUBLIC HIGH SCHOOLS.

DICK J. CROSBY,

Specialist in Agricultural Education of the United States Office of Experiment Stations.

Eleven States have appropriated funds to encourage the teaching of agriculture in existing public high schools. Several other States have made provision for special agricultural schools or given money for conducting teachers' training courses in which agriculture is one of the subjects of instruction, but these are not considered in this paper.

State aid varies in the different States from \$250 to \$3,000 to each school. The number of schools receiving State aid is usually limited by the size of a lump-sum appropriation, and this appropriation varies from \$10,000 in Massachusetts to \$125,000 in Minnesota.

The requirements to be met by the schools receiving State aid vary greatly in the different States, but in the main they include the employment of teachers having special training for their work, provision for suitable laboratories and laboratory equipment, land for educational work in agriculture, and the giving of courses of study approved by the State authorities in charge.

As a system for the development of agricultural and industrial education, State aid possesses many advantages over any system depending solely upon local initiative. In the first place, it usually insures better equipment, especially laboratories. Secondly, State aid carries with it a certain amount of State supervision, and this can more easily be made expert supervision than where everything concerning courses of study and methods of teaching are left to

town or county superintendents. And, finally, State aid will greatly stimulate the introduction of agriculture, home economies, and farm mechanics into our public high schools, and contribute materially to the success and permanence of this work. This will be accomplished because higher salaries will be paid and better teachers retained.

HIGH-SCHOOL AGRICULTURE WITHOUT STATE SUBSIDY.

W. H. FRENCH,

Michigan Agricultural College, East Lansing, Mich.

If education is to "fit for complete living," or if it is to give one power, we must admit in the first instance that the high-school graduate is not fitted for life, and in the second instance if he has power it is only in the "potential" form.

In order to give the product of the public school real power, or active power, the work of the schoolroom must be attached to the activities of human life through the introduction of such courses as will enable the student, in the process of his training, to apply principles to the actual solution of some of life's problems. In other words, vocational courses will afford an opportunity for such application and at the same time enable the student to discover his own aptitudes and develop a real purpose in life before he leaves the public school.

The traditional course of study need not be discarded; in fact, it must not be discarded, but it may be modified. This paper discusses the relation of the high school, which has been called "the people's college," with more or less of truth, to the great problem of the use and conservation of natural resources.

The children enter the high school on the average at 14 years of age, in the midst of the adolescent period. If it is true that the period from 14 to 18 years is the formative period, then it would seem perfectly logical that during such time he should be introduced to the activities of human life; and his true development would consist in relating his knowledge of literature, mathematics, science, and art to the activities in which men and women engage. Probably the greatest function of the high school is to open the door of opportunity before boys and girls and give them somewhat of a vision of their own possibilities.

It has been clearly shown in each State that there is an interest on the part of the people in agriculture as a subject of study; second, that agriculture correlates nicely with other science subjects; third, that we can develop intellectual power through it; fourth, that the lives of many young men are redirected and turned toward agricul-

ture; fifth, that practical results in farming processes in the community are secured.

If agriculture is to be presented in the most successful way, the courses should be introduced slowly, backed by properly organized public sentiment, and without such a forcing process as would be entailed by the offering of a State subsidy to the high schools taking up this work. Moreover, the teachers should be adequately trained; the course must be long enough to develop some definite results, logical in its arrangement and proper in its content.

The intellectual element has always been dominant in education; and while we may give physical, moral, intellectual, and industrial instruction—and in my judgment all these courses should be given—still in the work of public education the intellectual element must continually be dominant. We are not introducing courses in agriculture merely in order to turn out trained farmers, but we are introducing these courses in order that the student may relate general science to agricultural science and leave the school with an intelligent knowledge of the application of the scientific principles and with a vision of what he can do in the application of those principles in actual farm activities. What the country needs is intelligent farmers, professional farmers, or men who are artists in their line.

IN PUBLIC HIGH SCHOOLS SHOULD AGRICULTURE BE TAUGHT AS AGRICULTURE OR AS APPLIED SCIENCE?

I.—By WILLIAM R. HART.

Professor of Agricultural Education, Massachusetts Agricultural College, Amherst, Mass.

The conflict between theory and practice is inevitable. Theory, on the one hand, is only a way of expressing in general terms one's idea about a group of facts or the reasons for a course of action. On the other hand, practice is only the customary way of doing things. The method finds its chief justification in tradition.

Instruction in agriculture has two distinct phases. One involves the process of learning the art of doing things connected with the field, the garden, the barn and feed yard, the orchard, the meadow, the wood lot, and the tool house. The other phase of agricultural instruction relates to the sciences on which these several arts depend for their explanation. Art and science, instead of being opposed, are more intimately connected in the study of agriculture than in any other subject now offered in the schools, unless it is language. The vitality of language as a school study through the centuries is due to the intimate blending of the two arts of speaking and writing with the two sciences of grammar and logic. When we once become conscious of this indissoluble tie between the arts of commu-

nication and the sciences of human thinking, no school reform will ever lay violent hands on grammar and logic.

Agriculture is much more complex. Instead of embracing only two, it has a large group of arts. Instead of being explained by only two sciences, agriculture lays tribute on nearly every science known to man. And when the teacher of either agriculture or of science once becomes conscious of this ganglionic tie between the agricultural arts and all of the sciences he will teach science less "for the sake of science" and more "for the service of man."

The human-interest aspect of the physical and biological sciences is what makes certain substances like soil, water, and air, and a few plants and animals, agricultural. To teach these things apart from their human interest makes them simply objects of science and not agricultural. It would therefore appear that from the standpoint of the close relation of the farm arts to the sciences, or from the standpoint of human interest, agriculture should be taught as agriculture and not as an applied science.

II.—By G. F. WARREN.

Professor of Farm Management, Cornell University, Ithaca, N. Y.

Since agriculture is based on all the sciences, some persons have argued that it can best be taught by having the principles presented in the separate sciences rather than by having a new subject. This argument may sound logical, but it is utterly impracticable. Our textbooks of science are not written by persons who know much about agriculture. As soon as they go beyond a few very general illustrations they are more likely to emphasize some popular fallacy than to give real scientific principles. Agriculture is a new and rapidly growing science. To keep all the textbooks up to date would be an impossible task. It will be difficult enough to keep the textbooks on agriculture up to date without having to revise the agriculture in the science books every year.

Perhaps no error is more prevalent than the idea that agriculture is nothing but the application of other sciences. Even some agricultural colleges still fail to grasp the idea that agriculture is itself a science. Probably half of the best teaching of agriculture is not the application of any science except the science of agriculture. The laying of a tile drain is not physics. The training of a colt is not zoology. The grading and packing of apples is not botany.

Any school course that pretends to prepare for farming must teach the usual sciences and ought to include in these as many agricultural illustrations as possible, but to try to give agricultural training without agriculture as a separate subject is like Hamlet with Hamlet left out.

SOCIETY OF COLLEGE TEACHERS OF EDUCATION.

WHAT SHOULD BE THE DIFFERENCE BETWEEN GRADUATE AND UNDERGRADUATE WORK IN EDUCATION.

EDWARD F. BUCHNER,

Professor of Education and Philosophy, Johns Hopkins University, Baltimore, Md.

The phrasing of the subject implies that our attitude toward the topic is deliberative rather than legislative. Graduate work and education as a subject of advanced instruction largely characterized the university developments of the last quarter of the nineteenth century; but while the two movements are concomitant, they are not necessarily complementary.

Teaching as an art, and education as a body of knowledge pertaining to that art, are in many respects quite unlike technical professions, such as engineering, law, and medicine. In the latter, the student may not practice before he has completed his training, while at the same time the standards of this training are constantly raised. On the contrary, the student who has entered college may interrupt the course of his training at almost any point to go out to teach in some fashion. The irregular and accidental experience thus gained is a large part of the uncontrolled factors entering in the training of the teacher.

Viewed from extreme angles, there is ground for the contention entertained by some that teaching and research are directly opposite motivations in students. The college graduate tends to go at once into teaching, and trusts to chance for success. If education has appeared in his college work, it should have aimed to secure direct beneficial results for the student, and not to have been measured by any less utilitarian standards.

Graduate work, on the other hand, trains in technique through subject matter, in addition to demanding a working knowledge of facts, and an addition by the student to the sum of knowledge. The true genius of graduate work consists in the ability to weigh evidence. But at the same time all graduate work is not entirely research.

We should recognize a difference between graduate and undergraduate work in education in the results to be obtained, the scope of the subject matter, and the methods of procedure. These three

points become six when it is remembered that we should include them twice over in our consideration of the bearing of education on the training of teachers and the attempt to hold education as a field of knowledge as objectively as possible.

Education as undergraduate work helps the teacher in training anticipate school problems as well as prepares the future citizen in his collegiate youth to think clearly on the public and individual values of schooling. In a restricted and quasi-professional way the undergraduate work should include as much about education as a teacher should know. Everything that will throw light on the problems of those who have to bring constructive influences to bear upon human beings normally belongs here. In graduate work the aim should be the advance of education directly through a further training of teachers. Otherwise educational inquiry could be carried on by those who are not teachers, as has been done in some instances. The practical bearing of this result is no more direct and extends no further than the general connection between all knowledge and all practice. What is known about education is the excuse for teaching it, and it is because of the ignorance of the undergraduate (as future citizen or teacher) that this teaching should be performed. What we do not know about education is reason enough for graduate work, in the sense that advance in instruction finally becomes research.

It is imperative that we discern clearly the unity in all education, despite the variable forms and changes which it is constantly exhibiting. The detailed work, whether undergraduate or graduate, but particularly the former, should therefore be so well balanced with respect to the threefold knowledge of history, science, and technique as will guarantee to the student, within the range of ordinary probability, an intellectual appreciation of this unity and a consequent transfer thereof into professional ability. Every teacher needs, therefore, a working knowledge of the history of educational theory and practice, of the conditions of healthy human development, and of the technique involving practice and public administration.

Varying distinctions are made between graduate and undergraduate work, while education has been slowly making its way as a subject for research. Statistics compiled by the United States Bureau of Education and by the author indicate, among other things, a recognition in practical school administration now given the college graduate as a teacher.

DISCUSSION.

[In discussing Dr. Buchner's paper, Charles DeGarmo, Professor of the Science and Art of Education, Cornell University, made the following points, in part:]

Graduate and undergraduate studies may be identical; they may differ in degree only; or they may differ in kind. The type of work to be done by a student in education will vary, first, according to leading purposes; and, second, according to conditions of time, knowledge, and experience.

Graduate work in education for the M. A. degree should be an extension of undergraduate study in this department. The work for the doctor's degree in education should be apportioned as follows: One-third in education proper; one-third in psychology and biology; one-third in the social sciences. Graduate work in education should be dominated by the idea of research, but of a connected rather than of a detached character. The minors should, so far as possible, be studied with their educational applications in view, rather than as pure sciences; e. g., race psychology and modern logic in their bearing upon the reconstruction of English grammar. The doctor's thesis should, of course, be upon an educational theme, but, so far as possible, be based upon one or more of the fundamental sciences. The course of a graduate student in education should, aside from the thesis, be fairly well distributed over the important fields and focused upon such studies as history and principles of education, administration, etc. Before beginning their graduate study in education, students who have never taught should be advised of the many advantages of at least a brief teaching experience.

RELATION OF NORMAL SCHOOLS TO DEPARTMENTS AND SCHOOLS OF EDUCATION IN UNIVERSITIES.

I.—By GEORGE F. JAMES.

Dean of the College of Education, University of Minnesota, Minneapolis.

To discuss this problem clearly it is convenient to think of the normal school, with a two-year course for high-school graduates and of the university department, or school of education, with a four-year course of general and special study, of which one year may be professional work in the field of education and allied sciences. The standards here proposed are immediately workable and to that extent fall below the ideal.

The law and practice of certification of teachers need revision.

The fundamental problem in the relation of normal schools and departments or schools of education in colleges and universities concerns the preparation of high-school teachers. The general question of the training of teachers for public high schools is one of the most vital educational problems of the country. The teaching in higher institutions is admittedly much inferior to what it should be. Never-

theless the average instruction in the college is at least respectable; partly because the number of candidates is greater than the demand, therefore a selective process is constantly functioning; partly because a knowledge of subject matter tends to balance the lack of teaching ability, since the students are relatively mature, and able, therefore, to make progress in the face of odds.

The best teaching in the public schools is found in the kindergarten and in the primary grades. Careful investigation seems to indicate a greater efficiency in the elementary school than in any other part of the system of public education.

The teaching in the high school represents too often a training which is not much beyond that of the pupils in the same school in respect to years of study and is not infrequently almost lacking in the qualities of special professional discipline.

Even the rural-school situation, bad as that is, does not seem at the moment quite as difficult as is the problem of efficient high-school teaching. In a word, then, the country school, the graded school, and the college are all in a more hopeful position, as far as teaching is concerned, than is the secondary school.

The men who are in charge of school systems have come to demand three things of all candidates: First, a reasonable amount of native teaching ability; second, a fair acquaintance with the subjects to be taught; third, a definite idea of the nature of the school and some acquaintance with schoolroom management and the ordinary routine of instruction and government. Each of these is a perfectly legitimate demand, and no one need be hypercritical in asking on which of them the greatest stress is or should be laid. Public opinion supports to-day, in theory if not always in practice, the proposition that both scholarship and professional training are necessary for the teacher. The opportunity for training should be adequate, organized economically, and accessible.

The function of the normal school is primarily to prepare elementary-school teachers. The function of a department or school of education in a college or university is to give a professional training of higher grade. According to the soundest theory and practice, no serious overlapping of scope or field need develop, if higher institutions of learning care to undertake this type of vocational discipline and will give to it the same support which is now extended to preparation for other lines of social service. If colleges and universities do not equip themselves to train high-school teachers effectively, the normal college idea is sure to spread and the State will be called upon to maintain a training school for higher teachers apart from its university, at a certain loss in efficiency, economy, and accessibility. The relations of normal schools to departments or schools of education in universities will be worked out first of all in respect to field or

function in State system of public instruction. When this fundamental problem is solved other questions at issue will easily be answered.

II.—By CHARLES H. JOHNSTON.

Dean of the School of Education, the University of Kansas, Lawrence.

All discussions of our question, whether administrative or purely educational, must be predicated upon the assumptions that the preparation of teachers is essentially analogous to other professional preparation; that the public school men cannot do without the teacher of education; and that where different types of institutions organize to prepare teachers, there must be some cooperative State plan put into operation whereby needless duplication of function may be avoided, and where the natural developments of these same institutions may continue as rapidly as possible.

In the normal school, organization of content for presentation rather than the dominant college ideal of organization for further discovery for research is to be the aim. In the whole field of teacher training the normal school has, by virtue of priority, a right to enter.

As I see the problem, we professors of education have not succeeded better than we have chiefly because we have had to work alone professionally. What is most needed in most universities is the active and definite cooperation of the leaders among the scholars of the faculties, particularly of those who combine their scholarly interests with their intelligent concern for the high schools. The former apathetic cooperation of our scholarly colleagues and specialists, who offer technical courses, such as the history and psychology of education, often under protest, or who generally make a misnomer of some academic course, has dampened the professional atmosphere both for ourselves and our students. A genuine professional organization practically within the present resources of our universities is possible. Then hard but harmonious uninterrupted work for teachers will be, as it ought long ago to have been, one of the specific aims of universities. If the above account is correct, the normal-school insinuations that the universities are not equipped for training teachers will no longer hold. Consequently some plan for the coordination of the pedagogical functions of these two institutions becomes evidently necessary.

III.—By ELMER E. JONES.

Professor of History and Philosophy of Education, University of Indiana, Bloomington.

The marvelous development of interest in the scientific study of education, which has developed in the past decade, has had a marked effect upon the institutions devoted to the training of practical educators.

I would indicate some of the important fields for investigation which appear to me to belong logically to the normal school, though

I would by no means limit these fields to the normal schools. First of all, there is the whole field of method as applied to the instruction of youth. Second, no institution is better fitted to give us information concerning child growth and development than the normal school. Here is one of the largest and most important fields of investigation in education to-day, and yet how few of the normal schools are devoting themselves to it. Third, there is no institution which is so well equipped to initiate the novice into actual practice of teaching children as the normal school. No institution has so great an immediate responsibility as that of the normal school, because its graduates are set at once to the task of teaching children—developing childhood for the great complexity of adult life.

There may be situations in certain States wherein it is wise for the normal school to undertake the training of secondary teachers. But it would seem preferable to do a minimum of such work. Skillful teachers in the two fields of work can not successfully exchange positions. Knowledge of child life does not mean knowledge of adolescent life, nor vice versa.

Departments and schools of education incorporate in their curricula bodies of knowledge as extensive and as profound as are to be found in other similar departments, such as law, philosophy, or medicine. The practical problems considered are certainly as rich in significance as those to be found elsewhere. For example, it is as complex and difficult a problem scientifically to superintend a large city system of schools as to be governor of a State; yet, until recently, it has not been deemed necessary for the city superintendent to have the broad scholarship and the professional training that was expected of one who looked for gubernatorial honors.

The relationship existing between normal schools and departments and schools of education is thus rather clearly defined. Each has its own special field of work, which, of course, is not ironclad and never should be, but which is a product of evolution and no arbitrary mechanism. The normal school has evolved in America and in foreign countries because educators felt the need of definite and specific training for teachers in the elementary schools. Here is the great function of the normal school; and its field is large and profound enough to engage the best thought of our best scholars. Schools of education in connection with colleges and universities should supply the proper amount of professional training to those who are regular students of other departments and who may wish to teach. They should also furnish opportunity for research.

**UNDERGRADUATE DEGREES IN EDUCATION IN VARIOUS COLLEGES
AND UNIVERSITIES.**

JAMES E. LOUGH,
New York University.

According to the Report of the Commissioner of Education for 1910, 176 universities and colleges are offering courses in pedagogy.

The first chair of pedagogy in the United States was established in the University of Michigan in 1878. The tardy recognition by colleges of the importance of pedagogy is due largely to the belief, still prevalent among college professors, that the mastery of a subject carries with it the ability to teach the subject, all pedagogical study being therefore useless or worse than useless. The falsity of this theory is now generally accepted, even in collegiate circles, and I believe the time will soon come when our graduate schools, which are all largely professional schools for the training of teachers of collegiate subjects, will not merely admit pedagogy to the graduate rating, but will actually make the study of pedagogy a requirement for advanced degrees. The Ph. D. will then stand not only for the mastery of a subject, but also for some acquaintance with the principles and methods of teaching it.

A study of the courses offered by the different departments shows such a diversity of subject matter and of method that I feel justified in suggesting at this time the advisability of establishing a certain standard course in education as a minimum requirement for the undergraduate degree in education:

1. Educational psychology—that is, the elementary study of the mental operation involved in the educative process.
2. General principles of education, history of education, and general method.
3. Special methods and devices combined with at least one term of observation.

To these minimum requirements might be added, if time permitted, a brief course in the history of education, covering the modern educational reformers. Of course, a complete study of the history of education is necessary for all advanced graduate work in pedagogy. There should also be added to the minimum course, if possible, a brief course in class and school management, omitting all discussion of school administration, comparative school systems, etc., as these do not touch the problems of the young teacher.

**UNDERGRADUATE DEGREES IN EDUCATION IN VARIOUS COLLEGES
AND UNIVERSITIES: OUTLINE OF A COURSE IN SCHOOL HYGIENE.**

WILLIAM H. HECK.

Professor of Education, the University of Virginia.

My special purpose is to make an appeal for the requirements of a course in school hygiene, covering at least 10 weeks with three class hours a week, for all degrees in education. The need for such a requirement has been forced upon me in seven years of study and campaigning, as I have become more and more astonished at the ignorance or neglect, by teachers, principals, superintendents, and even professors of education, of the child's health as the basis of education, happiness, and success.

You would readily agree with me (1) that health is the first consideration of education; (2) that many conditions in our schools do not promote but even militate against the healthful development of childhood; (3) that other problems must not crowd to the rear those immediate ones arising out of these conditions; and (4) that the most effective way to make the advances now demanded by health considerations is to educate our present, and especially our future, teachers of all grades in the importance and in the practical methods of school hygiene. It behooves me, therefore, only to outline a tentative course that might meet some of the present needs.

The school of hygiene may conveniently be divided into six divisions:

I. Inspection for contagious diseases. The responsibility for this work falls upon the medical profession.

II. Inspection (and treatment) for developmental defects. In this division are included errors of refraction, defective hearing, adenoids, enlarged tonsils, decayed teeth, defects of posture, nervousness, malnutrition, etc. Here the responsibility is about evenly divided between the educational and medical professions, except in the few cities with complete systems of medical inspection.

III. Hygiene (or sanitation) of buildings and equipment. The educational profession must be held responsible for this division, with the aid of the architect, the sanitary engineer, and the doctor.

IV. Hygiene of school management. In this division are included such topics as the one or two session day, the length of the school day for each grade, the length of recitation periods by grades and by subjects, the alternation of recitation and study periods, the time of day for the more difficult subjects, the time and use of recesses and relaxation periods, luncheons, home study, hygiene of discipline, keeping in, hygiene of methods of teaching, etc. The relations of this division affect every part of school work. That we have evolved so few principles to guide us here, other than traditional and empirical rules, is not to the credit of our profession.

V. Exercise, play, games, and gymnastics. Here we have the division of physical education in the narrow sense. Intelligent interest in and enthusiasm for all-round physical education should be kindled at our normal schools and colleges.

VI. Teaching of hygiene in elementary and secondary schools. Hygiene—personal, domestic, civic—should be the background subject of all the courses in the elementary and secondary curriculum, and all teachers should be prepared to teach its essentials.

UNDERGRADUATE DEGREES IN EDUCATION IN VARIOUS COLLEGES AND UNIVERSITIES: THEIR ACADEMIC AND PROFESSIONAL REQUIREMENTS.

ANNA JANE MCKEAG.

President of Wilson College, Chambersburg, Pa.

Departments of education will profit greatly by an attempt at standardization of requirements and courses. This can be brought about only by concerted action among those of us who teach education. Indeed, until there is greater uniformity in the content of the chief courses offered in departments of education all discussion of the minimum requirement for degrees in education seems rather profitless. The one marked exception to the vagueness of terminology found in naming the courses as they appear in the curricula of the various colleges is that in the history of education—an important course, to which I should assign considerable more importance than does Prof. Lough.

To Prof. Lough's minimum requirements I should add a good preliminary course in general psychology, which is a desirable prerequisite to the study of both educational psychology and principles of education. Our present educational assets in the domain of special methods seem to be more valuable than in that of general method.

In colleges which offer any considerable number of courses in education counting toward the baccalaureate degree, a course in secondary education should be a part of the minimum requirement for any kind of certification of graduates for teaching positions.

THE PRESENT STATUS OF EDUCATION AS A SCIENCE: THE PROBLEM OF EDUCATIONAL PSYCHOLOGY.

V. A. C. HENMON,

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In none of the divisions of education is there greater difference of opinion as to its aim and subject matter than in educational psychology. The articulation of this branch with general psychology in

many institutions presents a difficult problem. Educational psychology in its widest sense embraces the study of those phases of mental life that concern education. It would thus include pertinent facts from general, genetic, social, and individual psychology. Does it, however, not have a more definite and specific field of its own?

If we define education in its simplest terms as the process of bringing an individual from where he is to where he ought to be, its three main problems emerge:

1. Where he ought to be—the end or aim of education—is the problem of principles of education to be worked out for the various types of schools and curricula and for the various periods into which mental life falls.

2. Where he is—the nature of the individual at every stage of his growth—is the problem of biology, sociology, and psychology, general, genetic, individual, and social.

3. How he is to be brought from where he is to where he ought to be gives the problems of methods of learning, on the one hand, and means and methods of teaching, on the other. Educational psychology seems to be legitimately concerned not with the second problem, but with the third. Its essential field is methods of learning, especially during school years and under school conditions.

The problem of educational psychology is distinctly different from that of general or genetic psychology. Each has a common object—the knowledge of mind and its laws—but the point of view is different. To borrow a distinction made by Mesmer, psychology is concerned with mental processes, educational psychology with mental work. That educational psychology has here an important field for investigation is shown by the recent studies of methods of learning both by adults and by children. Waste in education appears to be due more to inefficient methods of learning than to inefficient methods of teaching.

The art of learning is nowhere adequately taught, though it is the most valuable art one can acquire. Educational literature teems with books, monographs, and papers on the art of instruction. In contrast to this wealth of material is the paucity of literature on the art of study. The learning process has not yet received the serious study it deserves. We know the processes only in broad outline from psychology. Efficient methods of teaching will be discovered when the problem of efficient and economical learning is solved, and only then. Hence educational psychology should focus attention not on methods of teaching, but on methods of learning. The teacher is to teach children, not subjects. Actual school experiments will ultimately be the basis on which the science will rest.

THE PRESENT STATUS OF EDUCATION AS A SCIENCE: THE PRINCIPLES OF EDUCATION.

WILLIAM C. RUEDIGER.

Professor of Educational Psychology, the George Washington University, Washington, D. C.; Acting Professor of Educational Psychology, Howard University, Washington, D. C.

Education is not a pure science, but a professional calling, and as such it involves both pure and applied sciences which differ in the fact, *inter alia*, that whereas the pure sciences select facts and principles on the basis of their logical congruity, the applied sciences select them on the basis of the use to which they are put, thus establishing a *cross* classification. So far as teaching has a theoretical aspect, this aspect is represented by a group of applied sciences, and these in turn are related to a group of pure sciences. These pure sciences are chiefly psychology, logic, sociology, and ethics. It is to be added that science should be looked upon both as an organized body of knowledge and as possessing an inductive and relatively exact method of investigation.

The present status of the principles of education as an organized body of knowledge shows much confusion, the term "principles of education" apparently being used by many teachers as a blanket phrase. Allowing for the overlapping of courses and for inadequate correlation, it would no doubt be well within the mark to say that from one-fourth to one-half of the student's time in teachers' colleges and departments of education is wasted, and this all through lack of organization. This is undoubtedly the most regrettable result that follows the present chaotic state of educational theory.

In defining the term "principles of education," the twofold nature of the teacher's problem should be considered. On the one hand is the child, immature, inexperienced, but plastic and active; and on the other hand is the curriculum, representing the mature and sifted knowledge, ideals, and dexterity of the race. The subjects of study resulting from the dual nature of the teacher's problem are educational psychology for a scientific knowledge of the child, and principles of education and principles of teaching for an adequate comprehension of the curriculum. The word "teaching" is commonly applied to the process of the teacher's work; "education" to the broader social relations and consequences of that work.

What are the topics that the principles of education should include, and in what order should they be presented? The following is a suggested outline:

1. *Introduction to the field of education.* For the purpose of orienting the student, an introductory chapter would seem to be better than an introductory course. The idea of a brief, general, diversified course for general culture is not worthy of entertainment.

2. *Conduct controls.* Human life in a broad sense may be regarded as synonymous with conduct, and it may therefore be truly said that it is the function of education to supply conduct controls. These are two in number, hereditary and acquired. The effects of education, to which the expression "acquired controls of conduct" may be applied, may be grouped under the heads of habits, knowledge, and emotional dispositions. In a general way we may say that these three rubrics of education are imparted respectively by training, by instruction, and by inspiration.

3. *The generalized effects of education.* Most, if not all, of these conduct controls are to a certain extent generalized in their effects. It may, indeed, be asked if it is not about time to relegate the phrase "doctrine of formal discipline" to the historical side of educational theory. This expression, together with the conception underlying it, rests on false psychology, and it should go the way of that psychology. In the modern conception of psychology the old notion of formal discipline causes confusion. It is out of harmony, and the expression "the generalized effects of education" serves the purpose much better.

4. *The aim of education.*

5. *The elemental educational values.*

6. *The curriculum.*

7. *The values of the studies.*

8. *The construction and execution of courses of study.* The pivotal point of the course is the curriculum, which by a changed metaphor may be regarded as a condensed chart of civilization. But the curriculum must be preceded by a rounded exposition of the aim of education and by an analysis of the elemental educational values. This analysis is of importance by reason of the fact that the effectiveness of teaching depends not only upon the methods employed but also upon the goal in the teacher's mind. Moreover, for social purposes the teacher should be an educational engineer, able to give advice on the selection of studies as thoroughly scientific a manner as that in which the chemist gives advice in his field.

In arranging these elemental values of education we must answer two questions, and ask and answer them in succession: (1) Of what use is it to me to be educated? and (2) of what use is it to others to have me educated?

With certain omissions we may answer the first question by saying that education is of value to me because (1) it helps me to gain the needs and conveniences of life—practical or utilitarian value; (2) it helps me to get along more harmoniously with my fellows—socializing value; (3) it helps me to gain social standing or prestige—conventional value; and (4) it aids me in gaining pleasure and satisfaction (a) by opening up new avenues of enjoyment—senti-

mental value—and (b) by giving me understanding or insight—liberalizing or interpretative value.

With the aim and the elemental values of education leading up to the curriculum, the presentation of those principles that underlie the construction of courses of study should lead down from it.

The class is then ready to proceed to the principle of teaching. Here educational progress on the side of the curriculum and the course of study, and *pari passu* in the principles of education, can be contributed to from the following four sources at least: (1) By a historical study of the relation of the school and society; (2) by utilizing the advances continually made in the pure sciences; (3) by generalizing from existing educational practices; and (4) by formal experimentation and quantitative measurement. The sciences that contribute the direct comprehension of our civilization are, primarily, psychology, anthropology, sociology (including ethics), economics, and political sciences. In connection with formal experimentation it would be well, indeed, if every school system of considerable size would set apart one of its schools as a model or laboratory school with a well-trained education expert in charge.

THE PRESENT STATUS OF EDUCATION AS A SCIENCE: THE PRINCIPLES OF EDUCATION.

BIRD T. BALDWIN,

Professor of Education, the University of Texas, Austin.

If I interpret contemporary educational tendencies correctly, the assertion can be made that the science of education is most effectively developed and formulated through the efforts of sound fundamental research in the problems of education as such, rather than through the work of men in other fields.

That the other applied sciences will not hand over our data definitely formulated may be illustrated more in detail by my own problem in this class—the relation of mental development to physical growth and physical defects. The life history of 200 boys and girls, presented in 600 individual curves, based on over 5,000 measurements, gives, among other things, a vivid picture of the relationship between physical development and chronological age, showing that tall children are from one to four or even five years older than short ones; that they have their characteristic pubescent changes earlier, and therefore they should be treated physiologically as older children than their age in years would indicate. The high variability of this group indicates that averages are almost useless in studying physical growth, since each child is governed by his own inherent laws, expressing physiological age. It would follow that we are justified in making averages only when we base the average on the physiological

age instead of the chronological age, or, in other words, when we find the average chronological age at which rapid acceleration begins instead of when we find the average height, weight, or lung capacity at a given age based on date of birth.

This evokes a new and very important educational problem: How may we formulate a measuring scale for determining the physiological age of the child now that we have the Binet tests for his mental age? The individual-growth curves furnish splendid material for the study of this problem. The curves will also enable us in the future to prophesy with considerable accuracy how tall a normal child will be between 4 years of age and adult life, providing the height is known at any given interim. The same is true in general weight, lung capacity, and weight-height index, though there are more fluctuations here. The results also demonstrate that children from the wealthier class of people are better developed than those reported by other investigations, and that these children's height, weight, and lung capacity have actually been increased during their scholastic age through systematic medical inspection and physical training.

To recapitulate very briefly: We have come to a stage of development in our field when it is necessary to differentiate between the philosophy of education and the scientific principles of education, since the subject is not merely a critical discussion of facts and principles gathered from other sciences, neither is it merely a profession. It is an empirical science, with its own data, its own viewpoint, its own problems and situations, its own history, and its own practices and opportunities for experimentation. It is largely through scientific experimentation that principles are established and tried out, as indicated by the above type problems, the organization of courses in experimental education, and the establishment of experimental schools.

THE PRESENT STATUS OF EDUCATION AS A SCIENCE: EDUCATIONAL METHODS.

S. CHESTER PARKER.

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This discussion will concern primarily principles rather than practices.

For purposes of discussion, current principles of educational method may be divided, from the standpoint of source or origin, into four groups, as follows:

1. Those principles which have become current as the result of a long historical tradition which is characterized by more or less systematic a priori analysis and argument.

2. Those derived from more recent developments in general psychological theory, such as the work of James and Dewey.

3. Those which are corollaries of the results of experimental psychology.

4. Those which have been reached by direct experimental and statistical investigation of actual schoolroom processes.

While many of the traditional a priori principles of method may be traced back almost indefinitely, their currency during the nineteenth century and since is due largely to the Rousseau tradition. The Pestalozzian principles, many of which are current to-day, were to a considerable extent simply applications of Rousseau's principle of real experience as the starting point of instruction, combined with the method of simultaneous oral class instruction. A second Pestalozzian principle, namely, proceeding from the simple to the complex, has been at the basis of methods of teaching many of the subjects, and these methods are still dominant in many places. When we consider the Herbartian elements in contemporary methods, we find two of the most distinctive to be formal steps of instruction and the principles of correlation. Finally, when we come to the Froebelian elements in contemporary methods, we find the most distinctive ones to be, first, the emphasis on motor expression for general educative purposes, and, second, the emphasis on participation in a co-operative social situation as a basis of various reforms in methods.

Such traditional a priori principles constitute the largest part of contemporary principles of method.

Three examples, namely, motor expression, the analytic-synthetic theory of learning, and the analysis of reflective thought, serve to illustrate the second large source of principles of educational method, namely, recent developments in general psychology, in which the work and influence of such psychologists as William James and John Dewey are prominent.

The third source of principles of educational method is the work in experimental psychology, discussed at length in the previous paper by Prof. Hannon.

The fourth source of these principles is the experimental and statistical investigation of actual schoolroom processes, such as writing, spelling, reading, arithmetic, composition, etc.

These investigations may be divided into two classes: First, those which involve a minute analysis of the psychological processes involved in the school activities; and, second, those which involve a statistical study of the correlations which exist between certain educational methods and educational results, often without any very definite psychological analysis or explanation of this correlation.

NATIONAL COMMITTEE ON AGRICULTURAL EDUCATION.

DEFINITENESS IN AGRICULTURE.

A. B. HESS,

Superintendent of Schools, Crookston, Minn.

Agriculture is not a simple science, but a combination of sciences, each of which is so closely linked with the other that we can not know much of one without knowing something of the others. Science is classified, systematized knowledge. Agriculture, being a group of sciences, is easily taken to mean a group of subjects of general information rather than that systematized knowledge of subjects inter-related and interdependent.

Agriculture, if taught with a clearly defined and fixed purpose, will not only store the student's mind with facts and principles, but set him aflame, create in him an insatiable desire to further investigation. It will not only hold, but attract him to nature's workshop. He will literally cling to the soil and become an investigator, an experimenter, a producer.

A course in agriculture should include a general survey of elementary agriculture, to be followed by market and landscape gardening, forestry, agronomy, horticulture, bacteriology, and animal husbandry. If these subjects are made concrete, it will vitalize all school work, create interest, develop strength, and prepare the student for the real problems of life.

It has been said that all lines of activity in the United States have made wonderful advances, but agriculture during the past forty or fifty years has not kept pace with the advancement in other lines. Why is this? Let us see. How long have we been teaching agriculture in our higher institutions? How many high schools have been teaching it for 10 years? And yet we expect this phase of public-school education to have made equal advancement with other lines of investigation. How long have we been teaching physics, chemistry, ancient, medieval, and modern history, algebra, geometry, Latin, German, and kindred subjects? Is it any wonder that agriculture has not kept pace?

Have we had in mind the same motives, the same definite results to be accomplished here as elsewhere in our high-school curriculum?

In 1910 the United States produced 695,000,000 bushels of wheat, or a per capita production of about 7.7 bushels. Twenty years from now our population will number 200,000,000. The demand then for bread will be 1,540,000,000 bushels, or we shall be compelled to substitute other foods. This will mean that we shall produce 2.22 times as much wheat. We must produce 2.22 times as much per acre or increase our acreage. We can not increase our acreage to that extent; we must increase our production per acre. The average yield per acre in the United States for the past 10 years has been but 14.2 bushels, while England produced an average of 32 bushels, Germany 30 bushels, and Denmark 47 bushels per acre. Shall we permit the United States to remain so far behind these countries, when we have the richest soil, the finest climate, and the greatest education system in the world? These countries have brought about this result through better methods of seed selection, better cultivation, better soil management, and greater economical methods of marketing. Does this motive stand out prominently in our system of agricultural education? If it does, let us be definite in our purpose and bring about this result. We can, if we will.

WHAT UNCLE SAM CARRIES IN THE SECOND-CLASS MAIL: DOES THIS HELP THE FARMERS OR OTHER INDUSTRIAL WORKERS?

J. W. HESTON, *President State Normal School, Madison, S. Dak.*, and MANLEY J. WIXSON, *Superintendent of Schools, Enterprise, Kans.*

The Post Office Department of the United States is the largest, the most far-reaching, and the most beneficial Government enterprise in the world. Practically every citizen and resident of the country comes in daily contact with some of its agencies.

The second-class mail constitutes about 66 per cent by weight of all mail matter. Therefore a careful study of the content and value of this class of mail is of special interest. The problems of the Post Office Department are truly the problems of the people.

In preparing this paper we secured copies of representative newspapers and other periodicals from every part of the country. In the case of newspapers, farm papers, and cheap magazines, all the matter contained was carefully classified and the number of column inches of each class measured. The periodicals of the ordinary magazine form were carefully dissected, and the percentage of each class of matter found by weight. The total number of copies circulated by the periodicals which were measured reached 1,710,000,000 per year. More than half of these copies do not get into the mail. However, the ones measured constitute something like 15 per cent of the total weight of the second-class mail. Such an investigation certainly ought to give authoritative data.

Of the newspapers examined, 11 came from towns of 2,000 or less population; 12 more came from towns of from 2,000 to 10,000; 8 came from cities of from 10,000 to 25,000; 10 came from cities of from 25,000 to 75,000; and 26 from the larger centers. My error was in securing so many papers published in the larger places, for these publications depend on the mails for the transportation of only a small part of their issues. We are told by the circulating manager of the Globe Democrat that about 30 per cent goes into the mail. However, this error is made up by reason of the extremely large circulation of these great dailies and their great bulk when sent through the mails.

The results of the measurement of the newspapers are as follows:

	Per cent.
Judged as being of news value.....	22.0
Agricultural articles.....	3.3
Instructive articles.....	4.0
Illustrations and cartoons.....	4.9
Fiction judged as of literary value.....	2.0
Housekeeping, care of children, fashions, etc.....	2.2
Sensational news, cheap stories, etc.....	8.0
Miscellaneous.....	10.0
	56.4
Advertising matter.....	33.5
Patent medicine advertising.....	3.3
Classified advertising.....	6.2
Liquor advertising.....	.6
	43.6
Average weight per copy..... (ounces).....	3.82

Not more than 40 per cent of all newspaper matter is really worth while. The percentage of space in the country newspapers used for advertising is greater than in city papers, being about 45 per cent. The patent or ready-print sides of the country weeklies contain a larger percentage of patent medicine advertising than any other part of the second-class mail, and the reading matter there printed is very trashy.

Ten farm papers were measured and 48 per cent advertising found. The average weight per copy of the farm papers is 4.44 ounces per copy. The reading matter contained in this class of periodicals is fairly free from trash. The subscription prices of these farm papers are very low, showing that the publishers do not depend at all on the merit of their sheets to secure a large circulation, but probably the majority of subscriptions are obtained through the aid of prizes and clubbing offers. More than 95 per cent of the revenue of this class of papers comes from the advertisers.

Agricultural papers contain much information that is of interest to the farmers. Their editors seem to feel their responsibility and are fairly careful in regard to the advertisements that are allowed in their columns. But their caution does not seem to be sufficient to keep out the advertising of a large number of firms that do not seek to give value received. These questionable advertisements are a detriment to the farmers, for they encourage expenditure for useless and inferior goods.

The 19 high-class magazines examined show 36 per cent advertisements. The other matter is divided as follows: Fiction, 22.7 per cent; instructive articles, 24.6 per cent; miscellaneous, 16.7 per cent. These 19 magazines circulate over 204,000,000 copies annually, and average 432,000 copies per periodical per issue. The average weight of each copy is 9.74 ounces. The fiction is mostly of a high grade, some of the best of our current literature. Certainly no class of American periodical is more deserving of praise and encouragement than these higher-class magazines; they contain so much that is valuable and so little that is objectionable.

On the whole, the second-class mail matter contains too much that is valueless and even harmful to the public. My subject directs attention to its value to farmers and other industrial classes. What is valuable to this class is valuable to the entire American public, and what is harmful to them is alike harmful to the entire public, except that this class may not have the time, or take the time, carefully to select their periodical literature. Of course, our farmers and other working people should be protected from advertisements of spurious goods or goods on which they will spend money without securing adequate returns.

With this idea in mind I would advocate that every publisher be made definitely responsible for all that appears in the columns of his publication. He should be under bond to make good any loss sustained by readers because of quack goods advertised in his columns.

I do not know how sensational new articles, cheap fiction, and other trash can be eliminated. Unfortunately there is a demand for this stuff, and as long as this demand exists there will be a supply.

**BUSINESS MEETING OF THE DEPARTMENT OF SUPERIN-
TENDENCE, NATIONAL EDUCATION ASSOCIATION.**

St. Louis, February 28, 1912.

The following cities extended invitations for the meeting of the department in 1913: Boston, Mass.; Detroit, Mich.; Oklahoma City, Okla.; Palm Beach, Fla.; Richmond, Va., and Washington, D. C. Upon the first ballot Philadelphia received 150 votes, Oklahoma City, 141; Buffalo, 106; Palm Beach, 87; Richmond, 84. On the second ballot Philadelphia received 316; Oklahoma City, 195; Buffalo, 82. Philadelphia, having received a majority of the votes, was fixed as the place of meeting of the department for next year.

The committee on resolutions submitted the following nominations of officers:

For President—Supt. F. B. Dyer, Cincinnati, Ohio.

For First Vice President—Samuel Hamilton, Superintendent of Schools, Allegheny County, Pa.

For Second Vice President—Mrs. E. C. Ripley, Assistant Superintendent of Schools, Boston, Mass.

For Secretary—B. W. Torreyson, State Department of Education, Little Rock, Ark.

The nominees of the committee were elected without a dissenting voice.

The following resolutions were unanimously adopted:

RESOLUTIONS.

Your committee on resolutions presents the following resolutions, which it considers worthy of the attention and approval of the Department of Superintendence:

1. *Resolved*, That we express our hearty appreciation of the solid, earnest, professional character of the program presented before this, the greatest meeting in the history of the department.

2. *Resolved*, That this department recognize the Panama-Pacific International Exposition, to be held in San Francisco in 1915, as a great opportunity to exhibit our educational progress, and that we urge the State, county, and city systems of schools to promote and send such of their work as will reveal the development of all phases of education throughout the Nation.

3. *Resolved*, That the members of this department who are charged with the administration of public-school systems welcome and encourage all fair and candid investigations through commissions or other agencies into the soundness and effectiveness of the policies and methods used and the results obtained, but

that we condemn and resent all such investigations whose obvious purposes are to debase the systems or exalt the investigators.

4. *Resolved*, That we approve the work contemplated in the bill now pending in Congress providing for the creation of a Children's Bureau, but that we believe that it can be done more efficiently and economically by the Bureau of Education and that we hereby request Congress to appropriate sufficient funds to the Bureau of Education to enable it to do the work satisfactorily.

5. *Resolved, further*, That this Department of Superintendence of the National Education Association use every honorable means to secure from Congress a recognition of the nation-wide need for a great enlargement of the Bureau of Education, and that we urge Congress to provide the revenue necessary to carry into effect the wise policies recommended by the Commissioner of Education.

6. *Resolved*, That the committee on uniform records and reports appointed by this department two years ago be continued in order to aid in the adoption and use of their records and reports by school officers.

7. *Resolved*, That we express our hearty appreciation of the hospitality of St. Louis and the welcome extended to us by the board of education and teachers, and that we especially thank Supt. Ben Blewett for his courtesy and untiring efforts to make this meeting successful, pleasant, and profitable.

Respectfully submitted,

FRANCIS G. BLAIR, *Chairman*,
M. E. PEARSON,
REED B. TETRICK,
CHARLES S. CLARK,
BRUCE M. WATSON,

Committee.

A resolution submitted by E. O. Vaile, calling for an expression of the department's appreciation of the action taken by various language and philological associations relating to the phonetic key alphabet adopted by the department last year, was laid upon the table.

A resolution submitted by Supt. Call, of Hartford, Conn., providing for rescinding the action of the department at the Mobile meeting adopting the universal system of key notation, was carried, after a motion to lay the same upon the table had been defeated.

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