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GERMAN VIEWS OF AMERICAN EDUCATION,  
WITH PARTICULAR REFERENCE TO  
INDUSTRIAL DEVELOPMENT.

COLLATED FROM THE REPORTS OF THE ROYAL PRUSSIAN  
INDUSTRIAL COMMISSION OF 1904.

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## CONTENTS.

	Page.
Letter of transmittal.....	5
Preface.....	7
General considerations.....	9
The kindergarten.....	17
Elementary schools.....	17
Middle schools.....	19
Normal instruction.....	24
Drawing and art instruction.....	25
Industrial art schools.....	30
Technical colleges and other advanced technical institutions.....	35
Apprenticeship and trade schools.....	41
Contents of the "Reiseberichte".....	49
Index.....	49

## LETTER OF TRANSMITTAL

DEPARTMENT OF THE INTERIOR, BUREAU OF EDUCATION,

Washington, D. C., September 20, 1906.

Sir: I have the honor to transmit herewith the manuscript of the second number of the Bulletin of the Bureau of Education for the year 1906, and to recommend its publication under the provisions of the act approved May 28, 1896 (29 Stat. L., 171), authorizing the publication of such bulletin.

The public is generally familiar with the reports of the Mosely commission of 1903, a commission consisting of representative publicists and educators of Great Britain, who made a most interesting study of American educational conditions with special reference to their bearing upon industrial efficiency. The Royal Prussian commission, who visited this country in the year 1904, proceeded very quietly with their investigations, and their presence in this country excited comparatively little comment. The visit of this commission was, however, an international event of great significance. The reports of their observations have only recently been issued as a document of the House of Deputies of the Prussian Parliament, prepared under the direction of the minister of commerce and industry. At my request, Dr. W. N. Hailmann, of the Chicago Normal School, formerly superintendent of Indian schools of the United States, has prepared a summary of the contents of this volume, which is presented herewith.

It was no easy task to present in a bulletin of 55 pages an adequate synopsis of a quarto volume of nearly 500 pages, but Doctor Hailmann's work will, I think, be found in general a fair and discriminating summary of that document. In the interest of brevity it was found necessary to omit from consideration some very important portions of the text which deal with certain aspects of American industry rather than American education. Some objections may doubtless be raised to strictures on American schools which are cast by the members of the commission and summarized in this bulletin. It will be remembered, however, that what is presented in the several reports is mainly the impressions of the several commissioners gained in a few weeks of travel and observation in this country, a fact to which they themselves refer, in deprecating the acceptance of their reports as representing any ultimate judgment.

When all necessary deductions are made, the fact remains that these reports, prepared by highly trained and very able specialists, who view American institutions from a foreign standpoint and report their findings to their home government, can not fail to command the thoughtful consideration of Americans everywhere.

Doctor Hailmann has rearranged the matter of the report for the convenience of American readers. An analytical table of the contents of the original document, prepared by Dr. L. R. Klemm, of the Bureau of Education, appears on pages 45 to 47.

Very respectfully,

ELMER ELLSWORTH BROWN,  
*Commissioner.*

The SECRETARY OF THE INTERIOR.

## PREFACE.

The history and purpose of the Reiseberichte über Nordamerika (Reports of an inspection tour in North America), of which this bulletin presents a partial synopsis, will best appear in the following statements culled from the preface of the Reiseberichte.

The Prussian House of Deputies, on the 4th of June, 1902, requested the Prussian Government to institute a number of measures for the promotion of the smaller industries. In compliance with this request, the minister of commerce and industry, in the year 1903 sent commissioners to southern Germany, Switzerland, Austria, and England to gather data of interest and value for Prussian conditions.

In the year 1904 it was decided, on occasion of the St. Louis Exposition, to extend these studies to the United States and to appoint a suitable commission for this purpose. The majority of these commissioners left for America toward the end of August, 1904, and spent six to seven weeks in the United States.

After a short stay in New York they entered upon their studies in St. Louis. Here the extensive and rich Educational Department of the Exposition afforded a most favorable opportunity to gain a comprehensive view of the school conditions of the United States; here also the further plans for the journey were determined upon. In this it became necessary to consider chiefly the North Atlantic and northern Middle States, whose school system is most widely developed and a standard for the rest of the country.

None of the reports claim to give a final and indisputable judgment of the matters treated. They are based on impressions which German specialists gathered in six to seven weeks, in a country as large as Europe, the whole supplemented with the study of related literature.

In the several reports there will be found differing judgments on the same subject. In one will be heard more the voice of the admirer of American institutions, in another more that of the critic. Intentionally no effort was made to do away with these differences or to conceal them. Whatever may be lost thereby for the total impression of American educational institutions, as presented by the reports, will be gained in many-sidedness and impartiality.

Friends of our own [German] system of industrial instruction will seek in the reports chiefly suggestions by which we may be benefited. In hints in this direction the reports are not lacking. Only they must not hope to find accounts of institutions that can at once be transferred to Germany. The school system of a country is a part of its culture. It is indissolubly linked with its historic development, its economic and political condition. Thus, the American school system, too, with its superiorities and defects, is conditioned by the extremely rapid economic development of a young people, the democratic constitution of the country, its mode of settlement, the peculiar mixture of its population. In all these respects we live under essentially different conditions. If we would learn from the Americans we should try less to imitate one or another successful measure than to appropriate sound and effective ideas of organization.

It is evident from these statements that the reports, even where they deal with matters of general education, do so with constant reference to their bearing on technical instruction and industrial development. This should be steadily kept in mind in the perusal of this bulletin, lest the reports as well as the synopsis be charged unjustly with lack of comprehensiveness in the presentation of the data.

8  
PREFACE.

In the preparation of this bulletin, the chief purpose has been to present the impressions of the commissioners as baldly as possible, and only in so far as they touch upon matters of education in their bearing upon industrial development, in order to afford an opportunity to see ourselves in this work as others see us who know how to look and what to look for. Such a point of view is always profitable. It enables us, on the one hand, to see more clearly what there is in our work that deserves approbation and increased emphasis, and what, on the other hand, calls for revision.

Naturally, too, stress has been placed upon matters in our educational work that affect our development as an industrial nation. Merely interesting data of extraneous information have been omitted as foreign to this purpose, and detailed accounts of the organization of specific home institutions have been passed by as more completely accessible in their official publications. The steady hope has been that the matter here presented may aid us in seeking our goal more advisedly, with keener confidence in our ability and our resources, and with increasing reliance in our dealings with others on that "American fair play that seeks success only on the basis of true merit."

The reports of the following members of the commission appear in the Reiseberichte:

- Doctor Dunker, of Berlin, industrial councilor.
- Doctor Kuypers, of Düsseldorf, city school inspector.
- H. Back, director of the Industrial School at Frankfort-on-the-Main.
- Doctor Muthesius, of Berlin, industrial councilor.
- E. Thormalen, director of the School of Industrial Art, at Magdeburg.
- Professor Schick, director of the Industrial Art School at Cassel.
- Von Czihak, of Berlin, industrial school councilor.
- Professor Götte, of Berlin, industrial councilor.
- Beckert, of Schleswig, royal industrial school councilor.
- E. Beil, director of the Hardware and Cutlery School at Schmalkalden.
- Sellentin, director of the School of Shipbuilding and Machine Construction at Kiel.
- Professor Gürtler, of Berlin, industrial councilor.
- Pukall, director of the Royal Ceramic School at Bunzlau.
- W. Oppermann, of Arnberg, industrial councilor.

The title of the original work is:

Reiseberichte über Nordamerika: erstattet von Kommissaren des Königlich Preussischen Ministers für Handel und Gewerbe. Berlin, 1906. W. Moeser Buchdruckerei, Hofbuchdrucker Sr. Majestät des Kaisers und Königs. [490 p. F.]

## GERMAN VIEWS OF AMERICAN EDUCATION, WITH PARTICULAR REFERENCE TO INDUSTRIAL DEVELOPMENT.

### GENERAL CONSIDERATIONS.

#### I.

[From the report of Doctor Dunker.]

*Historic development.*—Doctor Dunker opens his report with a concise sketch of the historic development of the American school.

The American schools [he says] arose in response to local needs. They were from the beginning the children, not of theory, but of necessity, reflecting the political, cultural, and economic conditions of the new society which is developing beyond the sea. As the population passes out of the colonial into the national type the schools recede in character from their English models and emphasize more and more clearly distinct American features.

Education is not one of the interests assigned to the Federal Government by the Constitution of 1787. Yet the political development of the nineteenth century moved toward centralization. In the civil war the Union prevailed over State supremacy. The prodigious development of trade, the steady inland migration from State to State, the increasing accession of foreigners who wish to become Americans rather than citizens of particular States, created a new people, the wonderful uniformity of whose character became possible only thru the remarkable uniformity of land and climate. With the twentieth century, after the easy victory over old Spain, this people, still in the process of formation, assumes a character of increased solidarity with reference to other nations. \* \* \*

*National Teachers' Association.*—Parallel with this development, and because of it, proceeded the development of a national American school system. Shortly before the civil war (1857), when all other questions yielded to the question of union or separation, the National Teachers' Association was founded; and, after the victory of the Union, this association was reorganized on the basis on which it now rests. It constitutes to-day a powerful bond, uniting the entire educational system of the United States. Its annual meeting in Boston in 1903 was attended by over 32,000 members, from the presidents of the highest universities down to the plain rural teachers. Its sessions, its publications, and, above all, the reports of its committees, exert a far-reaching, unifying influence from the Atlantic to the Pacific, from the Great Lakes to the mouth of the Mississippi.

*Bureau of Education.*—Immediately after the civil war there was felt, too, the need of a national central office for educational affairs. As early as 1867 this office—the Bureau of Education—was created, and a few years later it was incorporated with the Department of the Interior.

It became the duty of the new Federal office to gather statistics showing the development of educational affairs in the several States, to aid the American people in the establishment of good schools by the diffusion of information concerning the organization of schools and methods of instruction, and to serve the interests of education in every direction.

The Bureau of Education has exerted an extraordinarily stimulating influence and contributed essentially to the development of a national school system. No other educational office of the world has done so extensive a literary work as this office, especially since Dr. William T. Harris has been its head (1889). Altho there may be many things among its publications which other countries would scarcely deem it necessary to print, there is, on the other hand, scarcely an educational problem for whose discussion the hundreds of bound volumes and pamphlets do not afford important material.

*Hoisting the flag.*—The national character of the American school is further indicated by the widely diffused custom, in many instances fixed by State law, of hoisting the flag of the Union over public school buildings during periods of instruction. It is especially significant that certain Southern States that heretofore had not forgotten the civil war and the evil days of reconstruction, under the direct influence of the victory over Spain began to hoist the Stars and Stripes over their schools instead of the State flag.

*Public schools.*—The new American school is a public school, i. e., a school established by the people, maintained by the people, conducted by the people, and open to the people without payment of tuition fees. It comprises (1) the kindergarten, from the fourth to the sixth year of age; (2) the elementary school (grammar school, primary school), with an eight-year course; (3) the middle school (high school), with a four-year course; (4) the college, with a four-year course; (5) the university.

None of the schools from (1) to (4) represent a blind alley, but each is meant to prepare for the next higher grade, in accordance with the words of Huxley, much quoted in America, that "no system of public education deserves the name of a national system if it does not raise a great educational ladder which leads from the gutter to the university."

*Religious instruction.*—The public school is independent of every church. It imparts no religious instruction; it does not, even for statistical purposes, inquire into the religious belief of its pupils. In many instances, however, it is customary to hold short devotional exercises in which all the pupils take part, and which consist of moralizing addresses or readings from the Bible. Free afternoons, Saturdays, and Sundays are at the disposal of the different denominations for private religious instruction. Some churches, however, maintain also their own schools from the elementary grades to the university, competing with the public institutions; for the Americans have, indeed, the idea of compulsory education, but not that of compulsory schools.

*Private schools.*—In cultural sections, especially where the fundamental Anglo-Saxon character is strongly prominent among the people, the older form of education—the private institution—has held its place at the side of the public school, and this more particularly with reference to high school, college, and university instruction.

Here belong, first of all, the old richly endowed institutions, such as Harvard, Yale, Columbia, and some others, distinguished by their corporate character, and to which have been added in later days the magnificent university foundations of wealthy captains of industry.

Private middle schools hold their own, especially when they lay stress upon preparation for college, and when, in opposition to the increasing prevalence of coeducation in public middle schools, they instruct the sexes separately. Moreover, new institutions of this kind, partly with very high tuition fees, have been established in recent times in response to segregating tendencies in certain social circles.

*Local differences.*—Quite naturally there exist in this young country among individual schools in the same category great differences, which often are not merely quantitative. Many a small city school in Massachusetts stands on a higher plane than a college in Arizona or New Mexico, and even the middle schools of Chicago, on the one hand, and those of old centers of culture, such as Philadelphia and Boston, on the other hand, can scarcely be designated as institutions of the same rank.

*General culture.*—The foregoing sketch of the American school system deals only with institutions of general culture. It is an American principle that the Commonwealth has not only the right but also the duty to provide for free public education from the district school to the university; but that, on the other hand, it has not only not the duty but indeed not the right to use the means of the Commonwealth for special education of any kind. Consequently, altho this principle is more and more being set aside, the greater part of the special education of jurists, clergymen, physicians, engineers, and merchants is consigned to private institutions. But conditions are stronger than human theories; they demand professional instruction and expansion of the idea of general culture.

*Difference between German and American schools.*—As to their general character, Doctor Dunker finds the essential difference between German and American schools in the fact that the former seek to instruct and the latter to educate. In America he finds "boards of education" and a "bureau of education," in Germany "ministers of instruction;" the German wants his children "to learn something worth while," the American "has his children educated." In the school life of Germany the

great educational principles are often neglected; the stress of discussion, always thro and logical, is upon matters of organization and special method, and such discussion is confined to experts and does not reach the great mass of the people.

In America, on the other hand, all great educational problems are in a fluid condition; they are discuss in meetings, books, magazines, and newspapers, often thoroly, sometimes superficially, almost always with enthusiasm and subjective conviction. The widest public is interested in the discussions. Usually the thought itself is derived from German studies, but here it is projected into the world of things, becomes a deed, often, it is true, before it is matured. The public is pleased to see it carried out; how this is done is frequently a minor consideration. Everywhere there is redulous optimism coupled with harmless dilettanteism, everywhere high aim, liberal execution, but lack of solidity in matters of detail.

The German educational ideal of a cultivated human being, as to its import, is more easily felt than defined; it is essentially aristocratic, since it can be realized only in a few. The American educational ideal is simple, concrete, and democratic, to wit: An American citizen, healthy (in mind and body), and self-dependent in judgment and action.<sup>a</sup>

As to the general treatment of the pupils' work, Doctor Dunker says:

While with us the school frequently points out to the children the inadequacy of their work, holds them to the perfect solution of minor tasks with painful attention to all difficulties, and overwhelms them with difficulties and exceptions, the opposite practice prevails in the American school. Difficulties are avoided, mistakes past by; frequently the pupils are given great tasks whose performance would exceed their power, and the school is satisfied with a childish treatment of the subject and makes the impression upon the children that the problem has been fully solved. This results in quickness of judgment, self-confidence, superficiality, and dilettanteism (*Laienhaftigkeit*).<sup>b</sup>

*Sanitation.*—With much approval Doctor Dunker directs attention to the care given to sanitation in the construction and equipment of the schoolhouses and to instruction in hygiene. With reference to lavatories and toilet rooms he says:

I have seen nothing like these in any German school and urgently recommend their imitation. \* \* \* Habituation to a certain luxury in lavatories and toilet rooms is something which, as a people, we very much need. In America these localities are often luxuriously equipped with marble and other expensive material; and we find here again that these apartments are better kept and more respected than the better their equipment.<sup>c</sup>

*Discipline.*—He also points to the gentleness of discipline, the comparative reduction of disciplinary drill, and the practical banishment of corporal punishment, ascribing these things largely to the prevalence of female teachers, for whose educational efficiency he has only words of commendation. "The word teacher," he says, "if not specially designated, is, in America, of feminine gender, and the great majority of American young people grow up under the direction of women teachers. This is only possible because of the position assigned to woman in America. \* \* \*

In an evening school for special instruction in Chicago we saw a young woman of about 28 years conduct a class of 30 to 40 grown and half-grown men with masterly tact, and confest to each other afterwards that we considered this impossible in a German metropolis."<sup>d</sup> On the other hand, Doctor Dunker holds that in scientific attainments these teachers in the middle schools are often deficient. His views on coeducation will be reported under the heading "Middle schools."

*Pride in schools.*—He notes the pride of Americans in their school system and concedes its justice, but criticizes the tendency of the great majority not to admit shortcomings of that system.

That, however, there are expert critics among them who do not conceal these faults is proved by the words of the president of the Massachusetts Institute of Technology, addrest to a teachers' gathering at Boston: "Our schools reflect, or possibly account for, the national tendency to make a little knowledge go a great way.

<sup>a</sup> *Relaeb. pp. 35-36.*

<sup>b</sup> *Ibid., pp. 39-40.*

<sup>c</sup> *Ibid., p. 36.*

<sup>d</sup> *Ibid., p. 40.*

The American is alert, energetic, resourceful, and superficial. He can make a little knowledge go further than the citizen of any other country, and this lesson he has had every opportunity to learn in the school. Initiative, resourcefulness, and nervous energy were great factors in our pioneer work, and they are great factors still; but they will not endure in competition with efficient training, patient study, and exact knowledge. The pioneer epoch has past." \* \* \*

*Patriotism.*—The American schools are pronouncedly national educational institutions. This, as already mentioned, is even externally indicated by the fact that public instruction is imparted under the shadow of the national flag. The great national anniversaries of the Declaration of Independence, of the birth of Washington and Lincoln, are celebrated with suspension of school exercises and with school festivals. The geography and history of the United States are thoroly studied in all kinds of schools, so that the pupil may learn to know and love his people and its heroes and become familiar with his country.

*Civics.*—He becomes acquainted with the institutions of public life in community, State, and Union in special courses of instruction (civics). The thought that every one is destined to take part in the conduct of State affairs and must, therefore, be familiarized early and thoroly with these institutions, is shared not only by the educators but by the whole people. Early, too, the naive belief is inculcated that these institutions are the best in the world.<sup>b</sup>

*American optimism.*—Later on, after analyzing in some detail the attitude of the average American toward other nations, Doctor Dunker continues:

On the whole, however, the average American looks upon the European peoples as pitiable existences, weakened by old age, whose children, weary of home tyranny, flee to the bosom of the alma mater Americana, seeking bread and freedom. In the larger centers of population this view grows out of the character of the immigrants and constitutes one of the sources of American national pride. This pride rests not upon a feeling of hatred, but upon a sense of pity and superiority which is renewed daily by contact with the wretched proletariat coming from darkest Europe, and in education and modes of life far inferior to the lowest strata of native laborers. \* \* \* If we add to this the unquestionably unprecedented economic development, the absence of a political counterbalance in the new world, the easy victory over old Spain, and, finally, the freedom of motion in American politics rendered possible by the unsettled condition of the European balance of power, we can understand the proud elevation of American self-appreciation, which has its roots less in the past than in the greatness of the present, and still more in the firm belief in a greater future.

And one of the roots of this optimism is grounded in the American school, with its educational ideal of American citizenship and its device: "A bright hope in the future."<sup>c</sup>

## II.

[From the report of Doctor Kuypers.]

Doctor Kuypers, after claiming for Pestalozzi, Froebel, Herbart, and Wundt a large share of credit for the educational progress of the United States, and pointing out the fact that the American educators of to-day have studied in Germany and acknowledge themselves to be "disciples of Germany," continues as follows:

But who will guarantee that the pupil will not excel the master unless the parts are interchanged and the teacher begins to learn from the pupil. Only such reciprocal stimulation can secure true progress. It is with German and American education as with all other arts, to the old the aims of the young may sometimes seem wild and their work unfinished, nay, immature; but that the creations of the young are full of suggestion in direct touch with reality, and largely planned, can not be denied, even by the old.

On the other hand, respect for traditions, the striving for attainable ends, regard for the little things, careful study of the course of procedure, and organic perfection, have a well-tried value in such daring new creations of youthful courage; but they are principles that impede progressive development. The solidity of the old must be joined to the eager, inventive spirit of the young, lest in time the good become antiquated, burdensome, unfit.

This thought forces itself upon the German educator on an inspection tour thru America as it does upon a representative of the old school who visits a modern exhibition of paintings, for the schools of the United States resemble in many ways such realistic pictures, largely planned but often only sketched in outline. To accept

<sup>a</sup>Proc. Nat'l Ed. Ass'n, 1908, p. 76.

<sup>b</sup>Reiseberichte, pp. 41-42.

<sup>c</sup>Ibid., p. 42.

them without criticism is impossible; to be ready with a snap judgment would be equally wrong. The visible or demonstrable "results" will often prove unsatisfactory; the aim will afford ample ground for thought.

It is less the material than the formal elements in American instruction that call for observation; the essentials lie not in the results, but in the principles. On the recognition of this fact the present report is based. \* \* \*

I have not tried to determine the extent of the results of instruction nor could I have done so. The Exposition, with its masses of exhibits, indicated clearly the principles, but could not give an idea of the results of instruction.

*Unreliability of "show work."*—In the "show work" of an exposition we never know in what way or how much the teacher has prepared the pupil or helped out in the work. Even independently done samples of work furnish no true index of the character of a school, much less of the schools of an entire country, for not the achievement of individuals but the average achievements afford data for judgment. Finally, the success of a school consists not in the achievement or result, but in the progress, in the advance over former conditions on the part of the same persons, which it is difficult to show in an exhibit. Moreover, it is impossible in such work to isolate the influence of the school from other influences.<sup>a</sup>

For these reasons Doctor Kuypers deems it necessary to supplement the impressions of the Exposition with visits to the schools themselves. This he does. Yet he refrains from expressing a judgment as to the results of instruction, because of the limited time available for such visits and the influence of personality upon such results, and confines himself to the study of the general principles and conditions which essentially determine the character of the influence of the school. Even in this he warns the reader that, inasmuch as he could visit only a limited number of schools, his judgments can not apply to American schools in general.

*Organization of schools.*—In his remarks on the organization of the public schools he agrees essentially with Doctor Dunker, laying stress on the facts that all schools, from the kindergarten to the university, are attended by all classes of people, that in all schools instruction is gratuitous, and that, except as to the colored race in the South, there is no distinction of race or nationality in the attendance. He notes, not without marks of approval, the "flexible system" of grading the pupils on the basis of attainments, the attention paid to local conditions in the work of entire schools, and the "significant democratic tendency to provide pupils with free textbooks and other school material."

*Regard for personality of pupils.*—The right of personality, which constitutes so large a factor in American life, exerts a great influence also in the school; for American methods respect to an extraordinary degree the inclinations of the young citizen. From the choice of playthings in the kindergarten to the election of studies in higher schools this fact is noticeable.<sup>b</sup>

*Appeal to sense perception.*—In the elementary school he sees this adaptation to child nature in appeals to sense perception thru the teacher's blackboard sketches rather than by means of apparatus, and still more in the utilization of the children's instincts of activity in graphic representation. "Drawing and painting are not limited to their formal cultural value as independent branches of instruction, but become in the service of all other branches a kind of childish thought expression in contents and form similar to oral and written thought utterance."

This he finds still further emphasized in "a kind of doing method," which even in purely theoretical branches claims bodily as well as mental activity, and culminates, in manual training, in the production of material objects with the help of tools.

By this method the education of hand and eye acquire equal value with mental development, and the cultivation of taste goes hand in hand with both.

This objective feature of the instruction keeps the school in touch with actual things. It assures, furthermore, a connection with the industrial and professional pursuits of later life, and renders the transition from the nursery to the school almost imperceptible. The entire school is permeated by a kind of kindergarten method.

<sup>a</sup> Reiseberichte, pp. 45-46.

<sup>b</sup> Ibid., p. 60.

*Superficiality.*—It should not be overlooked that this feature is at the same time a manifestation of a certain superficiality (*Ausserlichkeit*) that characterizes also the theoretical instruction.

The inclinations of the child, that constant criterion of the American teacher, naturally seek breadth rather than depth. The same is true of the theoretical instruction. It is stimulating and many-sided rather than thoro. It loves the concentration of subjects and the natural connection of things, and is therefore not too desirous to keep from passing over into the sphere of other occupations. The principles "from the easy to the difficult and from the simple to the complex" yield to the desire to be interesting, and often, one is tempted to say, entertaining.

Consequently, the spirit of enterprise of Young America, aspiring even more eagerly than the youth of Europe to new and great achievements, is given tasks which a systematic teacher of the Old World would introduce with a well-arranged sequence of preparatory exercises. It would miss at every step the all-sided thoroughness of work and the entire scale of formal steps (*Formalstufen*); but also, on the other hand, the reverse side, namely, ennui.

The aim is not to transmit a definite fund of knowledge, but the school would stimulate and show the way in which the young citizen can help himself in his further progress.<sup>a</sup>

*Reading.*—Doctor Kuypers accordingly points out that the use of readers with selections for discussion is gradually diminishing, that children in the eleventh year of age already use a number of special books on the different subjects of instruction, that school libraries are found even in the first year of school, that "use of the library" is prescribed in the courses of all grades, and that silent reading is carried on extensively even in the elementary school. "The pupil is to do connected reading, and, as far as possible, interpret for himself, so that he may be able later on to study successfully the books of public libraries and the newspapers."

*Training for citizenship.*—He is to become a citizen of a democratic state who is to extend his culture by his own efforts and to form his political judgments independently. \* \* \* This training for citizenship is not merely a subject for special instruction, nor merely like practise in the vernacular, an incidental aim of all other instruction as a matter of course; but this ethical education assumes also an objective form in the frequent cooperative work of groups of pupils of different grades in the same task in manual instruction, in which each one shares according to ability. Even in class instruction in the theoretical branches there is a phase of free common interest. This instruction consists more in a stimulating exchange of views than in an alternation of exposition and recital, of question and answer.

In aim and method therefore the American elementary school bears in a high degree upon actual life; the Americans want a "modern" school in the good sense of the word.<sup>b</sup>

*School open to all alike.*—Doctor Kuypers approves the fact that the elementary school is open to rich and poor alike, as a mutual spur to greater effort on the part of both, and as preventive of class hatred. He concedes that the extension of this common instruction to the fifteenth year can not but be beneficial to the great mass of the people; but he holds that for those who are to attend advanced schools it would be better if after the twelfth year the instruction were made to serve more as an introduction to advanced studies, inasmuch as now the courses of study of the last two years (seventh and eighth grades) bear more the character of finishing courses than of preparation for further school study.

*Coeducation.*—With reference to coeducation in these schools, he concedes that the moral advantages of coeducation exceed the dangers, and that the unaffected intercourse between boys and girls in the presence of others has a tendency to elevate both the masculine and feminine characteristics. He is of the opinion, however, that this should not extend beyond the twelfth year, and that after this year boys and girls require different materials and methods of instruction, except in certain branches which he does not name. Moreover, boys should be instructed after that year principally by men, altho he concedes that up to that period the educational

<sup>a</sup> *Relasberichte*, pp. 60-61.

<sup>b</sup> *Ibid.*, p. 61.

influence of women is not inferior to that of men, and that for the lowest grades, and especially for the kindergarten, it is superior.

*Progressiveness.*—He praises highly the efforts to guard the elementary school from becoming fossilized, and to adapt it as speedily as possible to the progressive requirements of the present; but condemns as fatal the abuse of utilizing the child for making experiments in methods and branches of instruction.

*School boards.*—In the practise of placing the control of schools in the hands of lay representatives of the people he sees opportunity to adapt the school to local needs and to stimulate interest and liberality on the part of the people, but warns against the dangers of party politics and against interference on the part of such school boards with the inner management of the schools.

*Home and school.*—He praises the spirit of unity that prevails between pupils and teacher, the home and the school, but fears that it is too dearly bought "when the teacher becomes a leader who obeys the pupils," holding that, even in a democratic state, the school should be an absolute monarchy.

*Points of excellence.*—He enumerates as unqualified points of excellence in the American school system the following:

The admirable development of the kindergarten and its organic connection with the normal school and elementary schools.

The far-reaching possibility in the school organization of grading pupils with reference to attainments and without regard to age, and the practise of placing two grades or half grades in one class as a stimulus to ambition and self-reliance.

The principle of gratuitous instruction and gratuitous material of instruction (text-books, etc.).

The relatively small number of pupils in individual class rooms, in spite of the rapid growth of cities.

The education of hand and eye in manual instruction as a preparation for industrial and technical pursuits on the part of pupils who have less talent for abstract studies, and as enhancing respect for bodily labor.

The tendency, not to give a finished education, but to prepare for further self-culture after school life.

The establishment of technical schools in universities and of chairs for the pedagogy of elementary schools and high schools, with practise schools connected.

The requirement of high-school training for normal students, and the preparation of many normal teachers in higher schools and universities; the elevated and friendly spirit in normal schools; their character as experimental stations for new methods; the choice situation and equipment of normal schools, especially in their laboratories.

The touch with academic and pedagogic science afforded to actual teachers, the zeal with which elementary teachers pursue cultural studies after graduation from normal schools, and the fact that opportunity for such pursuit is provided gratuitously.

The annual official publications of the Bureau of Education concerning the status of education in the entire world.

*Defects.*—As manifest defects the following are mentioned:

The fact that compulsory education is not as yet universal, and is, in many instances, not sufficiently comprehensive where it does exist.

The fact that there is no profession of elementary teaching.

The excessive employment of women in the school service.

The inadequate preparation of a number of district school-teachers, many of whom have had no normal training.

The inadequacy of salary and social position on the part of teachers, with the exception of those of a few cities.

*Extenuation*.—In extenuation, however, he adds:

It should not be overlooked, however, that these defects, to a large extent at least, are due to transitional conditions in the development of the country.

In many sparsely settled regions a well-regulated school organization may be impossible for the present. That the desire for such organization exists is shown by the increasing number of union schools to which the children are carried at public expense, organized by groups of communities.

It is just, too, to mention the contrast of the cities that seem to have solved through in a praiseworthy fashion the extraordinary task of adapting the development of the schools to their unprecedented growth.

Nay, the progress of the school system must appear surprising if we consider that America had scarcely been discovered when Luther could demand compulsory education in Germany, and that in the new country there were as yet no schools when in Europe the long struggle between the scholastics and humanists had come to an end.

If we consider this youth of the American school, the willingness and ability to bear the burden of school expenditures, the quick practical insight with which the Americans put into practise foreign educational ideas in their country, the rapid growth of the pedagogic sciences in the country itself, the unhampered work in the school and its adaptability, the further prospects for the American elementary school can appear only in a favorable light.<sup>a</sup>

### III.

[From the report of Councilor von Czihak.]

A few noteworthy additional utterances of a general character are found in the report of Councilor von Czihak.

In a short sketch of the historical development and organization of the public schools, which does not differ materially from Doctor Dunker's presentation, he emphasizes the universal predominance of Froebel's principle of "learning by doing," the increasing prevalence of high schools, the gratuity of instruction in all public schools, and the practise of coeducation.

*Appreciation of public schools*.—He criticizes the inadequacy of the compulsory school laws in conception and execution, but adds: "It would be wrong to conclude from this that the importance of public school instruction is not appreciated. On the contrary, there is in all strata of the people a firm belief in the value of this instruction, an eager desire for the best attainable school education. Politicians look upon the school as an essential factor in the social and political development of the state."<sup>b</sup>

*An organic whole*.—And, further on, he adds: "The organization of the American school system in elementary, as well as in advanced instruction, reveals a thoroly considered and logical plan. The interlocking of the various grades of school surprises by its unity and simplicity, and excels the organizations of European civilizations certainly in the ease of connection and transition between the elementary school, the advanced schools, the professional institutions, and the university."<sup>c</sup>

*Criticisms*.—And again: "There may be foundation for the criticisms that the American school carries too many and too varied subjects of instruction; that it is in too great a hurry; that it makes too many experiments; that it is inclined more to stimulate curiosity than to foster thought; that it is built more on the work of the teacher than on that of the pupil, and that, from our standpoint, many things in its work appear as dilettantism. Many of these things may be connected with certain national characteristics, but they do not invalidate the fact that the American school is thoroly in earnest."<sup>d</sup>

<sup>a</sup> Reiseberichte, pp. 63-64.

<sup>b</sup> Ibid., p. 186.

<sup>c</sup> Ibid., p. 187.

<sup>d</sup> Ibid., p. 188.

## THE KINDERGARTEN.

[From report of Doctor Kuypers.]

The dominant influence of Froebel in the work of American educational institutions has already been noticed. A special section is devoted to a consideration of his influence in the report of Doctor Kuypers. After a few introductory words bearing on the history of the kindergarten, he says:

At present kindergartens are found throuth the land, as public, charity, and church institutions. In very many instances they are organically connected with the elementary schools.

Thirty children are generally assigned to one kindergarten. The equipment of the kindergartens is good. A large quantity of suitable material is prepared by manufacturers.

*Kindergartners.*—The kindergartners are admirably prepared for their vocation. There are many kindergarten training schools, private and connected with normal schools and pedagogic professional schools, in which the students, in addition to theoretical instruction, are afforded opportunity for practise in kindergarten education. In their best form, the normal courses extend over two years after graduation from a high school. There are found also special supervisors for kindergartens.

The salary of kindergartners is not inferior to that of elementary teachers, altho their period of work is shorter.

*Aim.*—Inasmuch as the work of the kindergarten does not aim at instructional results, but at general educational development, the tendency to consider the interests of the child as well as actual and social life, so characteristic of American instruction in general, is most clearly shown in these institutions.

*Method.*—Suitable social occupations and games, the latter with piano accompaniment, songs and stories, above all manual activities adapted to the stage of development and with things related to child life, make of the kindergarten a large nursery (Kinderstube). They are busy with the present, they do not learn for the future. Nevertheless the childish play contains within itself the rudimentary ideas of later instruction.

This feeling of being occupied with the present, which rules the little American in the kindergarten, remains also with the older child in later school years. The kindergarten is therefore a characteristic form of American school life.

*Its influence.*—Indeed, the Froebelian principles are not limited in their influence to the kindergarten, but have brought also in the lower grades of the elementary schools a still wider application of that specifically American method of instruction which has been considered in a special section (see p. 13). In the teaching attitude, too, of the primary school the influence of the kindergarten is felt. A continuation of this kindergarten education up into the higher grades the Americans discovered in manual training at the Centennial Exposition (1876) in Philadelphia. Now Froebelian principles are found throuth the entire American school system.<sup>a</sup>

The reader is also referred here to page 15, where Doctor Kuypers commends as a point of special excellence of the American school system "the admirable development of the kindergarten and its organic connection with the normal and elementary schools."

## ELEMENTARY SCHOOLS (PRIMARY AND GRAMMAR SCHOOLS).

[From report of Doctor Kuypers.]

In addition to what has been quoted from Doctor Dunker's report concerning elementary schools, more particularly regarding sanitation and discipline (p. 11), and from Doctor Kuypers's report on organization, methods, and aims (p. 13), the following statements from Doctor Kuypers's report on subjects of instruction are of interest. The statements concerning course of study are based wholly, it seems, upon the schools of New York City.

*Course of study.*—The subjects of instruction [he reports] correspond on the whole with those of our Volksschule. The following points deserve prominence:

History is connected with civics and ethical instruction. Geography begins with the home and considers predominantly practical geographical relations. Nature

<sup>a</sup> Reisebericht, pp. 46-47.

study is the only one of the subjects dealing with matters of practical life (Realien) carried on from the beginning of the school period. Geography appears in the fourth and history not before the fifth grade. Hygiene and temperance instruction are important subjects, but practical gymnastics receives apparently little attention. Drawing and painting are done almost exclusively from memory or from nature. Landscape drawing, too, is carried on, generally from copy but, if feasible, also from nature.

During the first six years there is needlework (Handarbeitsunterricht) for the girls, and for the boys "constructive work," which is connected with drawing and serves as a preparation for shopwork. The two upper grades offer for the boys manual training in woodwork in the school workshop, and for the girls instruction in cooking. In these upper grades German, French, Latin, or stenography may be elected.<sup>a</sup>

Comparing the entire number of hours given to each of the several subjects during the entire elementary period in a New York City and a Prussian city school, Doctor Kuypers finds as follows:

Language, history, geography, and even arithmetic claim a smaller percentage than they do with us; the technical subjects and nature study a considerably greater percentage. The chief difference is found in our religious instruction and "free study" in New York. The former, which with us takes up one-sixth of our time, is lacking in the American school. On the other hand, the "free study," including the opening exercises and the elective subjects, occupies more than one-fifth of the school hours of an American elementary pupil. This does not include the busy work, consisting chiefly of supplementary reading or written work.

The striving for the development of individuality and independence is prominent also here. At the same time it should not be overlooked that the entire number of school hours is greater with us than in America [New York City].

*Manual training.*—Manual training deserves special mention. At the time of the Philadelphia Exposition (1876) manual training entered upon its triumphal march thru the American schools, and it is still to-day the most popular subject of instruction. No other subject meets as does this the ideas of Americans concerning school education. Its highest development is found in special higher institutions—the manual-training high schools.

I abstain from describing them and from giving an account of the current course of this subject, since other members of the commission will probably treat of the subject in detail.

Nevertheless, I desire to give a short account of a course of manual training, which, in connection with the history of human culture, may give to this subject general educational value. [Doctor Kuypers refers here to the course of the Horace Mann School, of Teachers College, New York.] This course differs from the usual manual-training plan, inasmuch as the sequence of work tasks is not based on technical difficulties, but upon the successive stages of human development; for these stages reveal their character in their technical and industrial products, and the improvements in these have kept pace with the progress of culture.

Now it is proposed that the pupil familiarize himself in his school reading and thru instruction theoretically with this progress of humanity, illustrate it in drawing, and live it out in manual training. In this plan increase of difficulties naturally follows progress in ability. This manual training is, therefore, more than a mere training of hand and eye: it is the highest form of self-activity, rendering matters of instruction objective<sup>b</sup> and of concentration of subjects of instruction, and becomes practically the center of all instruction. \* \* \*

On the whole, however, manual training is limited to the education of hand and eye. Since the equipment of workshops and the work itself demand considerable expense, it has become developed as shopwork mostly in the cities, where "shops" can be more extensively utilized.

In a number of cities it is obligatory in the two upper grades; in others the pupils are at least given an opportunity to learn it, either in the school itself or at a manual training center.<sup>c</sup>

<sup>a</sup> Reiseberichte, p. 51.

<sup>b</sup> The term "Veranschaulichung" is here rendered by the phrase, "rendering matters of instruction objective." Possibly the obtained words "objectification" or "objectivation" might have answered the purpose.

<sup>c</sup> Reiseberichte, pp. 54-56.

## MIDDLE SCHOOLS.

[From report of Doctor Dunker.]

*Historical.*—Doctor Dunker introduces his report on the middle or high schools in their relations to commerce and industry with a historical account of their development, as a result, on the one hand, of the need of college preparatory schools (fitting schools), and on the other hand, of a demand of the "middle classes" of the people for advanced preparation for the more difficult problems of practical life (finishing schools). The former were originally organized in imitation of the "grammar schools" of England; the latter, at first, took the form of private academies.

The first American high school represented an upward development of the elementary school (Volksschule). It was maintained at public expense and charged no tuition fee. In its original plan there were neither ancient nor modern foreign languages. As a finishing school it was from the start in obvious contrast with the fitting school. It was established by the mercantile and industrial interests of a large commercial city, for whose rising generation the elementary school was no longer sufficient and the Latin school too impractical.

*Rapid extension.*—After the civil war, in spite of "demagogic opposition" to these "schools for the children of the rich," the high schools developed very rapidly. Yet—

In the natural course of things it came about that just where the high schools were the best, there arose the wish to secure for their graduates admission to colleges. This was the necessary outcome of the principle: "No blind alleys in education." The high school was therefore compelled to take up the work of a fitting school in addition to that of a finishing school. With this the addition of instruction in foreign languages in the middle school became necessary.

*Motley courses.*—Now the colleges were as yet purely classical institutions of learning, while, at the same time, practical life was becoming increasingly complex. The attempt to satisfy the requirements of both—the college and life—resulted in high school courses of instruction of unprecedented complexity. A thousand things, from Æschylus to book-keeping and surveying, were taught, naturally nothing thoroly; a mechanical patchwork of many things, but no great educational aim. But gradually there was formulated the educational ideal, namely, the American citizen.

The colleges \* \* \* adapted their requirements for admission to the new conditions and modified their courses. The same was done by the high schools. Both reflect, as in a microcosm, the complexity of the life of the people, which in a young democracy necessarily influences the schools more directly than in older States with a fixed school code prescribed by the government, a school bureaucracy, and the rigid routine of a professional body of teachers.

*Present organization.*—Out of this confusion several distinct courses were precipitated, generally three—the classical, the half classical, and the scientific—which, in their essentials, correspond with our gymnasium, real gymnasium, and real school tendencies. In all the larger middle schools these subdivisions are emphasized from grade to grade, quite rarely in fixed prescribed courses, but usually in such a way that as the pupils advance in the grades the number of obligatory subjects is reduced, while the number of elective subjects is increased correspondingly. A certain minimum of lesson periods is prescribed.

Altho this double character of the high school as a preparation for life and for college is prominent and much praised, a closer analysis of courses of study shows that in the large schools special courses are provided for those who desire to be fitted for college. Strictly, therefore, the courses intended for practical life—the non-collegiate courses—are again blind alleys. We find, therefore, not a solution of the problem, but at best mitigation of contrasts by conducting the different courses under one roof and under one director, which makes the passage from one course to the other possible and comparatively easy.

*Latin.*—In the preparation for practical life, the belief in the cultural value of Latin plays a much greater part than with us. Formerly it was the knowledge of this language that distinguished the literary man from the workman, and, with the tenacity of the parvenu in culture, many an American adheres to this idea. With the briskness peculiar to him he studies for a year, in four weekly lessons, the severe,

difficult language of Rome, which demands years of devoted work. The idea is still quite prevalent that it argues extension of culture to be able to recognize a number of Latin roots in the Romanic part of the English vocabulary. The proud inscription, "Per Pacem ad Libertas," in one of the principal rooms of the Philippine exhibit at St. Louis indicates the outcome of such classical culture.

*New movements.*—In spite of this pseudo-classicism, and coupled with it, there have lately appeared in this land of contrasts wholly new movements in the middle school, viz., the introduction of manual training and commercial instruction. This represents a frontier region between general and industrial education, such as we do not possess in Germany in this extent and importance.<sup>a</sup>

*Manual training.*—Doctor Dinker finds the impetus to the introduction of manual training in the Philadelphia Exposition and in the Massachusetts Institute of Technology, strengthened by the Swedish *stod* and Froebelian educational ideas, as well as by a predisposition in the character of the American people in favor of "learning by doing."<sup>b</sup>

After enumerating the various phases of manual training, or "education of the hand" in its widest sense, as applied to boys and girls, childhood and youth, he divides the subject, irrespective of drawing, into manual occupations for childhood, manual occupations for girls, and work in wood and metals for older boys, and continues:

This third kind of manual work has become a distinguishing peculiarity of the American middle school. It agrees thoroly with the characteristic tendency of the American toward concreteness and reacts as a determining factor in the development of the character of the American people. To what extent it is cause and in how far it is effect it is difficult to determine.

In order to prevent misunderstanding, this instruction in industrial manual work—the specifically American "manual training"—should not be confounded with the German *Handfertigkeitsunterricht* (instruction in manual skill). It begins where the latter ends.<sup>b</sup>

In succeeding pages he gives credit for the introduction of manual training in the American middle schools to the "indefatigable activity" of Prof. C. M. Woodward, presents an elaborate account of the organization of his school, points to the phenomenal increase in the number of public high schools that have adopted manual training (from 37 cities of over 8,000 inhabitants in 1890 to 270 such cities in 1902), and mentions the Massachusetts law, making its introduction obligatory in cities of over 20,000 inhabitants.

*Manual-training high schools.*—Furthermore, he points out that Professor Woodward's aim was not so much the mere introduction of manual training in existing schools, as the establishment of manual training high schools in which "the whole boy" is educated.

The number of such schools, mostly public, he estimates at 30, and continues:

The leaders of this movement emphasize at every opportunity that their cause is only a matter of public education; that they want simply to educate; that they are not concerned with the future calling of the pupils as engineers, physicians, lawyers, merchants, or what not. Their schools, they claim, are not trade schools, fitting for certain occupations to be subsequently followed, but institutions for general culture, partly devoted to instruction in general industrial propaedeutics.

This, indeed, Doctor Dinker designates as the essential distinction of American manual training as contrasted with German practice, a manual training that is held to be of equal rank with literary subjects and admitted in the required minima of lessons.

As to the educational value of American manual training in the middle schools, he adds elsewhere:

This shopwork has much value for physical development and ethical education. It trains the eye and strengthens the muscles. Just at this period of development

<sup>a</sup> *Reiseberichte*, pp. 14-16.

<sup>b</sup> *Ibid.*, p. 1.

<sup>c</sup> *Ibid.*, p. 21.

and unthoughtness the mingling of muscular and mental work is beneficial and guards against much that is foolish and worse.

Frequently when we met, cheerily working at the anvil or turning lathe, a class of vigorous boys to whom we had just listened in a recitation of Cicero or Schiller, or when we saw them eagerly engaged in drawing or modeling, the pleasure over their delightful creative doing was mingled with the painful feeling that they were not German youths we had before us.

In this shopwork it is not possible to slight a problem, to dismiss a difficulty with a phrase or a half-understood word. The daily dealing with material things gives a knowledge of their nature and skill in their appropriate use, in their proper handling. Thus, while shopwork inculcates a sense of truth and a respect for the nature of things, it also lays the foundation for the cultivation of artistic taste.

The manipulating of machines demands keen observation and quick and definite decision. The control of the natural force harnessed in the machine, the management of the tools and of the material give to the young man an assured feeling of mastery over the surrounding world of things, as well as confidence in himself and in the future. This feeling leaves no room for the world-estrangement of papered natures, which at the same time keep timidly aloof from the world of things and haughtily look down upon manual labor. Instruction in handicraft by capable master-artisans enhances, together with appreciation of manual skill, also respect for manual labor. And this attitude, which honors all decent labor, is one of the strongest supports of American greatness.

Shopwork, in accordance with a fundamental but often forgotten educational principle, rests upon the native instincts of the growing human being. Not every boy of approximately middle-school age (Tertioperalter) is inclined to scientific studies, but almost every boy has an instinctive desire to create with the hand something concrete and tangible. To direct and cultivate this instinct must be the task of a rational education. Now, the advocates of manual training have always emphasized the point that they desire, by means of this manual training, to attract to the middle-school pupils that are not drawn to higher culture by literary interests. Such pupils, who are not in themselves bad or mentally deficient, but whose interest can not be reached by a one-sided school, are found in all countries. With us they are kept in the higher, almost purely literary, school by the pressure of military privileges. Beginning with Quarta [the sixth class of the gymnasium, counting from the highest class], they embarrass the classes, vex the teachers, lower the standard of instruction, and therefore that of the entire school, become overaged, and secure at best the military privilege of one year's army service. If they turn out well in some vocation in later life it is in spite of the school, not because of the school. Very often, however, they enter upon practical life morose natures, without faith in themselves and their calling, without energy, without creative ardor, irritated against the school that failed to reach them. Of the best the school can give, of the desire for progress, of the yearning for more and higher things, they have not felt a breath; their culture has come to an end, but also for effective manual work they are spoiled.

Just with such boys, lacking in literary talent or taste, the manual-training school aims to stimulate mental life with the help of the workshop. In wood and metal work, with tool and machine, they acquire skill and knowledge, which come to rest on a scientific foundation thru the close connection of the shopwork with drawing, mathematics, and physics. "It is our aim to bring thought and labor together, to make the thinker a worker and the worker a thinker. Even in manual training, the chief object is mental development and culture."

*Laboratories.*—For similar reasons, Doctor Dunker mentions with approval the appeal to self-activity in the equipment and management of the laboratories of the middle schools in connection with instruction in chemistry, physics, and biology.

The teacher [he writes] does not confine himself to the statement of a fact and its illustration by appropriate experiment, but the pupils themselves prove the truth by their own experiment, or are led to discover the truth by experiment as something new.

Of course, this requires twice as much time, but of more importance at this point, it seems to me, than the amount of ground gone over is the manner of going over it, the stimulation and cultivation of a tendency for independent future work.

I saw a class of 44 pupils working in botany. Each pupil had a set of tools \* \* \* provided by the school, for which the pupil was responsible to the school. Each one used, with the pupil placed opposite, often of the opposite sex—a microscope.

They made their own preparations, examined these, exchanged their observations, drew what they had seen, and wrote a description. By this self-doing, hand and eye and the understanding are cultivated simultaneously. I believe that German middle schools in their methods rarely train their pupils similarly in scientific observation, in graphic and written expression; for what school in Germany possesses so many microscopes?<sup>a</sup>

*Commercial instruction.*—The introduction of commercial instruction is attributed by Doctor Dunker to the desire on the part of teachers to retain the pupils for a longer time in the schools. Many parents, holding that the middle school offered nothing of immediate practical value to their boys after graduation from the elementary schools, preferred to send them to some business college; and this tendency was strengthened on the part of business colleges by the publication of pamphlets and by personal agitation, warning the graduates of elementary schools against the high schools and seeking to gain them for their institutions.

In order to counteract this pressure, a number of middle schools established commercial courses, in which penmanship, typewriting, shorthand, bookkeeping, and commercial arithmetic took the place of languages, mathematics, and natural science. \* \* \* More thoughtful educators opposed this commercial instruction, which, like that of the business school, represented mere drill for commercial clerkships. Inasmuch as the commercial courses made less onerous demands upon intellectual effort than the other courses they were sought by indolent or weak pupils. In many instances, moreover, they occupied only one or two years in contrast with the other courses of the high school, which required four years. The keen observation that it is a shame "to turn clever boys into cheap clerks" correctly characterizes this procedure.

Recently, under the influence of German ideas, a number of larger cities have undertaken to establish commercial high schools, which are genuine educational institutions. The best of this kind is probably the commercial department of the Philadelphia Central High School, under the direction of Cheesman A. Herrick, the efficient pioneer in commercial high school instruction. Chicago is about to establish a similar institution, but wants first to send its city board of education to Germany.<sup>b</sup>

Here follow full accounts of the New York High School of Commerce and of the commercial courses of the Drexel Institute.

*Colleges of commerce.*—The colleges of commerce, according to Doctor Dunker, arose from the demand, on the one hand, of educators who desired to increase college attendance and to raise the people to a higher level of culture, and, on the other hand, from the idea that "the American captain of industry needs in the great tasks set for him by economic life a deeper understanding of economic, judicial, and social questions than the old college can afford him."

As leading institutions of this character, Doctor Dunker enumerates the college of commerce and administration of the University of Chicago, the Wharton school of the University of Pennsylvania, the school of commerce of the University of Wisconsin, the University of Michigan, the school of commerce of the University of California, the University of Illinois, the Amos Tuck school of Dartmouth College, and the school of commerce, accounts, and finance of New York University.

In subsequent paragraphs he outlines briefly the course of study of the Wharton school and that of the Amos Tuck school, remarks the great attention paid thruout to transportation and banking, the important position assigned to relations between employer and employee and other social problems, the insufficiency of language instruction "with a background of the politics of commerce," and the fact that the treatment of geography and colonial affairs tends to imperialism, and concludes as follows:

The preceding account indicates that in their application of German suggestions the Americans have impressed a part of their general educational system with ideas of political economics. In details and in organization we can learn nothing of them, for the former are often inadequate and the latter is adapted to the general system

<sup>a</sup> Reiseberichte, p. 29.

<sup>b</sup> Ibid., p. 25.

of instruction of the country. But we should not forget that the Americans are energetically at work to advance consciously the interests of what they call American "expansion." In the struggle between Germany, England, and America for the world market, which will characterize the twentieth century, the prospects of victory will lie with the people that can send into this contest the greatest number of men with a free and wide outlook, with skill in organization, and the exercise of power. And whether our schools, in which the rising commercial generation of Germany seeks its culture, could not do still more for the education of such men is a question whose repeated and serious consideration should be earnestly urged.<sup>a</sup>

Additional notes of interest in Doctor Dunker's report treat of the use of text-books and of coeducation. These notes seem to apply in many points to the elementary rather than the middle schools.

*Text-books.*—A peculiar place [he writes] is occupied in the American school by the text-book. It plays a much more important part than the manual with us. It is more constraining, obscures the personality of the teacher, and renders the instruction, therefore, in a measure impersonal. Originally the value of the text-book rested on the lack of good teachers. For this reason books were written that contained in readable form just the lessons to be learned. The activity, and frequently also the ability, of the teacher was limited to the setting of tasks in the book and to the hearing of recitations. This is frequently the case even to-day; yet a combination of the text-book method with personal teaching is aimed at. In this as well as in other things necessity was made a virtue, and it is especially claimed for the text-book that the pupil must be trained to deal with printed matter free from the leading strings of the teacher—that man depends for progress in life on books and newspapers and must be trained early in their use.

There lies a truth in this, and the best outcome of the method is that an extensive and good popular scientific literature has been created, and that the text-books refer to supplementary books and recognized authorities. This certainly enables the diligent and talented pupil with a large amount of free time at his disposal, with the help of the text-book and the perusal of supplementary matter, to progress much more rapidly than his less industrious and less gifted schoolmate. If the teacher assists him in this with occasional hints, advice, and special tasks, class instruction assumes thereby somewhat of the character of individual instruction. This combination of class instruction with individual instruction is favored by the practise of instructing in most instances two divisions in the same class. The diligent and gifted pupil of the lower division is thus enabled to do also the work of the higher division—to finish the year's work in half a year—and to secure earlier promotion to a higher class. Thus a way is opened to the capable and diligent pupil. "We give the bright boy a chance" is a principle which is often quoted in the school as well as in industrial life.

Of course American text-book instruction is barred to us, but we should, nevertheless, consider ways and means to encourage independent and individual reading with our pupils. We should also not lose sight of the problem of promoting the capable pupils in accordance with their talents and inclinations. In all class instruction, particularly in Prussia, there is danger that mediocrity may crush talent. With us the average mark "sufficient" (*genugend*) rules in school.<sup>b</sup>

*Coeducation.*—Certain statistics with reference to coeducation are summed up as follows:

Coeducation is looked upon as a specifically American and democratic measure, and this secures its triumph in the public schools. On the other hand, the desire for the separation of the sexes on the part of parents opposed to coeducation constituted a new reason for the existence of private schools. It is reported that 95 per cent of the pupils of public middle schools and 43 per cent of those of private middle schools are educated in mixed institutions. Irrespective of all else coeducation certainly promotes innocent association between the sexes and moderates sexual tension. It is equally certain that it can bring about a salutary community of interests between the two sexes, and it would surely be better for many of the smaller cities of Germany to establish a common public high school for boys and girls, instead of a gymnasium for boys and a poor private school for girls. [See also p. 14 for Doctor Kuyper's views.]

On the whole [Doctor Dunker adds], the American "middle class" is inclined to place its sons early in business, but to let its daughters continue for a longer period in the middle school. Thus it happens that while the lower grades usually still

<sup>a</sup> Reiseberichte, p. 34.

<sup>b</sup> Ibid., pp. 33-36.

afford an example of coeducation, the higher grades present the aspect of a higher school for girls (höhere Töcherschule), in which a few male guests are tolerated. An even more pathetic impression is made by the isolated male students that have wandered into the normal schools."

#### NORMAL INSTRUCTION.

[From report of Doctor Kuypers.]

*Historical.*—Doctor Kuypers in his report introduces a special section devoted to normal instruction, with a short historical note, in which he credits Horace Mann with successful efforts, due to Prussian influence, leading to the establishment at Lexington, Mass., of the first American normal school. He notices the distrust with which this innovation was received and the difficulty of finding a practise school, because of the general lack of appreciation of the fact that teachers needed preparation in the art of instruction. About the middle of the nineteenth century, however, other States followed the example of Massachusetts, and to-day, Doctor Kuypers reports, all the States of the Union have normal schools.

*Lack of trained teachers.*—He finds that altho the number of teachers trained in such schools has increased to an extraordinary extent during the past few decades, it is still very small compared with the entire number of teachers. "Even to-day the teachers of district schools as a rule have had no normal training, and a considerable number of them no special preparation of any kind."

This, without doubt, is due, he holds, to the impossibility of meeting the steadily growing need of properly trained teachers, for "that there is no longer any lack of appreciation of normal training on the part of State governments is proved by the character and equipment of the normal school buildings."

*Buildings and equipment.*—These are structures of noble style, generally erected in charming and quiet locations, spacious and excellent in taste, provided with gymnasium, assembly room, library and reading rooms, study rooms, drawing and music halls, especially equipped rooms for biology, natural history, geography, history, and, above all else, with well-constructed laboratories for physics, for chemistry, and for physiology. To these are added everywhere school kitchens and workshops for manual training. The reception and rest rooms of the students, the parlors and conference rooms of the faculty, remind one in their equipment of an elegant home rather than of an educational institution.

Classical statues, as of Venus of Milo and Apollo Belvedere, and valuable reproductions of masterpieces of ancient and modern art in every room and corridor, make of the normal school an educational institution ideally adapted to its high purpose.

Frequently dormitories and boarding houses for the students are connected with the school, choice and homelike in equipment, and respecting the privacy of occupants.

*Characteristics.*—It is noted that these schools differ in scope and method of instruction; that they are open to all sects and to both sexes, altho practically the students are almost exclusively women; that instruction is gratuitous to residents of the State; and that, while there is a distinct effort to make the instruction exclusively professional, many of their courses still are academic.

*Used for general culture.*—As a consequence of the last point Doctor Kuypers finds that many students continue to use the normal schools for purposes of general culture, and this the more so as they are not subject to after-payment of tuition, if they fail to take up the profession. This also explains the fact that the high attendance of many normal schools, in many instances exceeding 1,000, is out of proportion with the number of trained teachers annually at the disposal of the State.

*Course of study.*—With reference to the course of study he notes that it usually extends over two years, requiring for entrance high school graduation, and directs special attention to bookkeeping and civics as subjects of instruction, also to the

<sup>a</sup> Reiseberichte, p. 41.

<sup>b</sup> Ibid., p. 57.

great prominence given to laboratory work and to independent experiments on the part of students in the several departments of natural science. As directly preparing for teaching he mentions the study of the human body, psychology, "the favorite study of the American teacher," general and special method, history of education, school management, and school laws, as well as sufficient practise in teaching in a practise school connected with the institution or placed at its disposal by the local school board.

Frequently, distinctive courses are offered for special teachers, more particularly in manual training and domestic science. Almost universally we find also a special kindergarten department, with a kindergarten connected with the practise school.<sup>a</sup>

In further elaboration he points out that "most of the large cities have their own normal schools for their local needs, and in order to afford the daughters of the city opportunity for an independent position," and that some normal schools have three and four year courses for elementary school principals, high school teachers, and school supervisors.

The élite, however [he continues], are found in post-graduate courses. These are attended by teachers who, after graduation, have improved themselves by practise and return to their alma mater. To these select classes the schools admit also others who, after graduation from a college course, wish to supplement their scientific education with pedagogic training. \* \* \*

For teachers who are engaged in work, and can not leave their positions for the purpose of advanced training, there are vacation courses, summer courses, and Saturday courses connected with the normal schools.<sup>b</sup>

*Other opportunities*.—In addition to these public normal schools Doctor Kuypers mentions private normal schools (which, however, do not confine themselves to the preparation of teachers), public and private teachers' institutes, reading circles, and summer schools of the Chautauqua type.

*Teachers*.—The teachers of normal schools he reports as being well prepared by experience and culture; in the higher positions, mostly college graduates. Also, he mentions as significant, "that the leading normal schools require for admission graduation from a four-year high school course, and that teachers of high schools usually consider a call by a normal school as a promotion and an improvement in their position."<sup>c</sup>

In a few instances he finds, also, instead of separate normal schools, normal departments in connection with higher institutions of learning.

*Normal colleges*.—For more comprehensive and more systematic, scientific, and pedagogic culture than is usually afforded by the normal school, and for the purpose of enabling teachers to secure a degree (B. A.), normal colleges of recognized rank offer courses of four to five years to graduates of high schools. By continuing their studies such students may advance to the degree of M. A., or, if their studies were related to pedagogic sciences, to that of doctor of pedagogics. \* \* \*

*Teachers' college*.—The climax of pedagogic education, however, is afforded by the teachers' college, a pedagogic professional school of university rank, with requirements for admission similar to those of academic professional schools of other faculties.<sup>a</sup>

For further remarks of Doctor Kuypers on normal schools, see page 15, under the heading of "General Considerations."

## DRAWING AND ART INSTRUCTION.

Extensive and interesting observations on the subject of drawing are found in the reports of Doctor Muthesius, Director Thornälén, Professor Schick, and Councilor v. Czihak. The following synopsis will confine itself chiefly to the presentation of the statements of these reports concerning the merits and results of the American treatment of this subject of instruction.

<sup>a</sup> Reiseberichte, p. 58.

<sup>b</sup> Ibid., pp. 58-59.

<sup>c</sup> Ibid., p. 61.

[From the report of Councilor v. Czihak.]

*Leading ideas.*—The leading ideas [writes Councilor v. Czihak] of American instruction in drawing [in the elementary school] are those laid down by Herbert Spencer in his work on Education. What the children, left to themselves, like to draw, is to be drawn: Things in their environment, which in size, shape, color, or motion excite their attention, life forms, utensils, animals, human beings. The drawing of straight, curved, and composite lines for exercise is wholly rejected by Spencer, as in general the drawing from copy. Furthermore, he places greater value upon the rendering of color impressions than upon that of outline. He lays down the principle that it is of less importance that the child produce beautiful drawings than that skill in drawing be developed. However crude and awkward their first efforts in form and color, the natural interest of the children in drawing should be encouraged. With increased experience, in the place of striking incidents, the children would of themselves gradually succeed in the better observation and truer representation of simple objects. For the first years, Spencer considers regular instruction in drawing scarcely practicable, but only encouragement in rather desultory graphic work. On the whole, he condemns the construction of a course of drawing on the basis of its elements—combinations of lines—for the same reason for which he condemns in language instruction the practise of beginning with grammatical analysis, because in instruction the abstract should never precede the concrete, nor scientific ideas experience or doing.<sup>a</sup>

On this basis, Councilor v. Czihak reports, the Prang series of text-books has been compiled in such a way that teachers will find it easy to make changes in them in accordance with local needs or their personal views. With reference to the program of this series, he concludes:

In reading [this program] one is inclined to doubt its practicality, and still more its success. These depend, indeed, upon the selection made from the abundance of dishes and the manner of serving them. In point of fact the inspection at the Exposition of the drawing books of individual pupils compelled the admission that both these things are done with skill and taste by the American drawing teachers.<sup>b</sup>

*Uniformity of treatment.*—A surprising feature in this subject of instruction is the great uniformity in its treatment from New York to California, and from the Canadian to the Mexican boundary line. Nowhere can drawing from copies be found; everywhere drawing instruction is built up on the basis of kindergarten work (so-called constructive work) on paper folding, stick laying, freehand cutting, clay modeling, weaving, and sewing, in accordance with an expanded Froebelian system. Everywhere there is drawing not only from nature and from objects, but also from memory, and even drawing from imagination; the sketching, e. g., of simple landscapes and designs is carried on, with help, it is true. This is accompanied in all grades with the development of the color sense and of the sense for the values of tints and shades, of the sense for rhythm, balance, harmony, and distribution of masses. It is an instruction of exceptional efficiency in the development of taste, compared with which our drawing instruction in the elementary school [Volksschule] appears almost one-sided.<sup>c</sup>

*Trifling results.*—On the other hand, he expresses still greater astonishment at finding the evidences of the influence of this drawing so slight in the work of industrial art schools, in the widely distributed dilettanteism, and in the American home.

"Either," he adds, "the current method followed in drawing [in the elementary school] has been too recently introduced to have had any influence, or it does not go deep enough in its effect, or our faith in the taste-developing force of the instruction in drawing is not justified. In any event, the United States is in this, as in so many other points, the 'land of contrasts.'"<sup>c</sup> In a subsequent paragraph he refers the beginning of the current method to the year 1888, which seems to place the burden of lack of influence upon the exceeding newness of the method.

[From the report of Doctor Muthesius.]

To this general sketch Doctor Muthesius, who reports on drawing with special reference to industrial art, adds a number of instructive supplementary items. He,

<sup>a</sup> Reiseberichte, p. 195.

<sup>b</sup> Ibid., pp. 196-198.

<sup>c</sup> Ibid., p. 198.

too, finds the beginning and basis of drawing instruction in the kindergarten, and continues:

*Elemental principles.*—In the elementary school proper drawing instruction soon assumes a more definite form; but one point of view is never lost sight of, namely, that drawing instruction is concerned with an artistic activity. America lacks altogether those European points of view, that the children need at first, for the exercise of hand and eye, geometrical models for free-hand copying, or that, in order to become familiar with the various modes of representation, they should draw from copies. The American idea is, in the first place, to represent objects that are or have been seen, and, in the second place, as soon as possible to attempt independent artistic composition in small sketches and constructive work.

*Contrasts with European ideas.*—The old European idea that drawing and painting from nature are too difficult for the child, and that only the adult can be permitted to deal with nature—and he only after drawing from copies and dead plaster casts—has no place in America, and would be received there as a myth. Also the American children are given from the start all the means of graphic representation; they handle from the beginning brush and paints, crayon and pen. Also in this the American idea is opposed to the old European idea which considers aquarelle painting as especially difficult and to be learned only by older pupils.

*Drawing from nature.*—In the majority of American elementary schools \* \* \* drawing from nature is practised from the lowest grades on, and in this practise preference is given to plants and flowers, which are represented directly with brush and water color. The plant is placed at some distance from the group of pupils, and these attempt to fix the general appearance of the object, partly without previous pencil sketch, in water color.

Of course, if the pupils were required to render the object correctly in these drawings, many defects would be found, especially in the lower grades. The pictures are more or less schematic; foreshortening, the foldings of leaves, etc., are usually not represented. On the other hand, the freedom with which the general impression is fixed, and the taste with which this is rendered in color, are frequently surprising.<sup>a</sup>

*Human figure.*—In subsequent paragraphs, Doctor Muthesius refers to the drawing of the human figure, which also "affords surprising indications of power of observation and pleasing instances of naïve artistic rendering;" to free sketching, from imagination and memory, relating to historical events, fairy stories, or to the representation of things previously seen. "In the upper grades there is added to these things the more accurate drawing of simple and complex objects."

*Designing.*—Running parallel with representative drawing, he finds from the start practise in designing borders, etc., based on plant forms or on motives chosen from historic ornament, together with the application of such designs in the decoration of lamp shades, book covers, etc. "In these objects one finds generally indications of very good taste, more especially in the choice of elegant and harmonious coloring." He notes also in this connection the tendency to apply the growing art appreciation of the children to various forms of manual work in leather, wood, clay, etc.

*High school instruction.*—With reference to the work of the high school, "where instruction in drawing and manual training is continued on similar lines," Doctor Muthesius makes special mention of monochromatic landscape drawing, which finds "its chief value in the cultivation of taste and in training the eye for appreciation of scenic beauty."

As connected with artistic drawing, he notes furthermore with approval "a sort of applied esthetics," in the contemplation of works of art of which small reproductions are placed in the children's hands, for discussion by the teacher and subsequent written account by the children. While he admits the doubtful character of such instruction, unless it is conducted by a teacher of artistic bent, he still considers it superior to the current art history in higher German schools, inasmuch as it deals with concrete material placed before the pupil.

*Supervision.*—He attributes the success of American instruction in drawing chiefly to its highly organized system of supervision by well-trained special teachers, and

<sup>a</sup> *Relieberichte*, p. 135.

refers with much approval to the preparation of such supervisors by "the normal school for drawing teachers in Boston. This school," he adds, "furnishes a type worthy of imitation as an institution for the training of elementary and middle school teachers of technical and artistic drawing."

*Summary.*—In conclusion, Doctor Muthesius sums up his impressions in the general judgment, that "in its general spirit and principles American instruction in drawing is excellent and worthy of imitation," and adds:

The results of the instruction, too, in the lower grades exceed all expectations. In the advanced grades, however, they do not wholly accord with this auspicious beginning. While the work of the children of eight or nine years is so admirable, the pupils of fifteen or sixteen often offer correspondingly little that is satisfactory. We should expect from the pupil of the highest grades that in drawing from nature they would have the ability to see form clearly and to apprehend an object accurately. But instruction has failed to develop a disposition to see clearly; the plant drawings of the 16-year-old pupils frequently present the same schematic picture as those of the lower grades. Manifestly, this is due to the fact that instruction wholly neglects exercises in accuracy. One is forcibly reminded of the desultory method of piano instruction that plays only parlor pieces without introducing the finger exercises necessary for the systematic progress of the pupil.<sup>a</sup>

[From the report of Director Thormälen.]

In a short account of drawing in American schools, Director Thormälen agrees in his views with Doctor Muthesius, emphasizing more particularly the value of the "excellent organization" due to the system of supervision; the value of flower drawing from memory, which "best counteracts the danger of losing oneself in details;" the importance of landscape drawing, more particularly in middle schools; the fact that the drawing of ornament, on the basis of previous illustrations by the teacher, is more invention than copying and is a method that "cultivates the taste, gives the pupils an idea of the value of artistic work, and thereby a criterion for estimating the achievements of others." He also notes the striking inferiority of the results obtained in high schools as compared with the elementary schools.

[From the report of Professor Schick.]

Professor Schick supplements these statements with a discussion of the influence of J. Liberty Tadd, Arthur Dow, Denman Ross, Hugo Froelich, and Bonnie E. Snow upon the development of methods.

*J. Liberty Tadd.*—To J. Liberty Tadd he accords "the significant merit" of having first emphasized drawing from nature and from memory, but finds in the schools small indications of Tadd's advocacy of ambidextrous drawing after motives of Greek and Renaissance ornament. To his method in the drawing of ornament he concedes "a certain value in the development of manual dexterity and of the control of the hands by the will and intellect, which represents Tadd's chief purpose," but criticizes the "unquestionable loss of the finer appreciation of form which must be sacrificed in the acquisition of these external forms of skill."

*Arthur Dow.*—In Arthur Dow he recognizes a student of Japanese art principles and a successful advocate of idealism in art, who "in his instruction inverts the way ordinarily followed in art instruction."

"He [Dow] considers it wrong to begin with leading the pupil to the control of the tools of art, thru the drawing from plaster casts, perspective," etc., holding that "the essence of art lies not in the correct rendering of nature, but in beauty, which, in its turn, depends on the knowledge of the laws of composition." Professor Schick doubts, on the whole, the cogency and practicability of Dow's ideas, but concedes the value of his insistence on proportion of line and surface, and on the picturesque contrasts of light and shade in every phase of instruction in drawing, more par-

<sup>a</sup> Reiseberichte, p. 137.

ticularly in schools of industrial art, where this insistence is "of inestimable value, inasmuch as, in these, simple designs afford opportunity for easy application and clear explanation of these principles."<sup>a</sup>

With reference to the same topic, Dow's influence upon American drawing, Councillor v. Czihak writes: "It is remarkable how prominent a place the composition of landscapes occupies in American [elementary] drawing instruction. On the other hand, I note that I have not found in any art school or academy a special class in landscape drawing, and only in one of them a few pictures of landscapes. Again, then, the land of contrasts."<sup>b</sup>

*Denman Ross.*—With reference to Denman Ross, Professor Schick limits himself to the bare mentioning of the fact that Ross is about to publish an extended work on the subject of color effects. On the other hand, Councillor v. Czihak gives a succinct account of his theory and method, states that his color theory has attained "wide reputation," and has been accepted in No. 5 of Prang's series of text-books, but refrains from further comment.

*Hugo Froelich and Bonnie E. Snow.*—Concerning Hugo Froelich and Bonnie E. Snow, Professor Schick is content to introduce them as the editors of a series of "text-books of art instruction" which "is still to be tried." He finds that these texts, among other things, partly utilize the methods of Dow and Ross; emphasizes that they begin at once with landscape presentation in color, and that, with the aid of free-hand cutting and other occupations, they succeed with manifest skill in making the first drawing instruction "a kind of play;" notes their varied and comprehensive character, and closes with the statement that "with the completion of the work the children will doubtless leave the school as finished artists—if, indeed, they do all these things as excellently as they are represented in the books themselves."<sup>c</sup>

Certain instructive remarks on the application of the above observations to German conditions are so intimately connected with industrial art that it is thought best to postpone the synopsis of this portion of Professor Schick's report to the section treating of industrial art.

[From the Report of Councillor Czihak.]

*Art schools.*—Councillor v. Czihak devotes a few paragraphs to art instruction. After enumerating a number of typical art academies, art schools connected with museums, art departments of universities and colleges, art departments of institutions of a polytechnic or universal character, and institutions conducted "on a business basis," he continues:

The instruction in the majority of these institutions is conducted in the conventional fashion borrowed from European art academies and art schools. Drawing and modeling from plaster casts and from the antique play a very prominent part in preparatory instruction; subsequently, drawing and modeling from life are carried on quite extensively by both sexes separately; still life, too, receives much attention. Nearly all schools have a class for portraiture, and, as a special American peculiarity, an illustration class, which is usually connected with a so-called composition class. The illustration classes are generally well attended, since illustration for the numerous magazines is a well-paid occupation and in great favor with women. Landscape painting is almost wholly absent; occasionally there is found an etching class; historical painting I have not seen.

On an average three-fourths and more of the students belong to the female sex; everywhere dilettanti constitute a considerable percentage of the pupils.

On the whole these schools do not attain the standard of our art academies, conducted by artists of reputation. Evidently they lack teachers of high standing in art and the needed art atmosphere. Persons rejected by Europe, and graduates of the institutions, frequently serve as teachers and professors. The work thruout is only mediocre. A few of these schools, in States that have no special normal art schools, train drawing teachers or utilize Saturdays for the training of such teachers.<sup>d</sup>

<sup>a</sup> Reisebericht, p. 168.

<sup>b</sup> Ibid., p. 197.

<sup>c</sup> Ibid., p. 169.

<sup>d</sup> Ibid., p. 201.

## INDUSTRIAL ART SCHOOLS.

[From report of Doctor Muthesius.]

*Present condition of industrial art.*—With regard to the present condition of industrial art in America, Doctor Muthesius reports:

The prospect that German industrial art will at some day play a leading part in the American market is not precluded, seeing that the characteristic industrial achievements of America are as yet unpretentious and quite undeveloped. While, indeed, school instruction is laying a foundation for a certain artistic receptivity on the part of the Americans, the consequences of this instruction have not as yet been established in American industrial art. Furthermore, it is strikingly evident that the propitious beginnings of the transfer to America of the English industrial-art movement in Morris's time have not exerted a pervading influence. Evidently the English arts-and-crafts idea was too primitive and rustic for American feeling, so that the influence of England extends to only a small part of America's industrial product, more particularly to a certain kind of furniture, to ceramics, and to a few forms of metal work.<sup>a</sup>

On the other hand, Doctor Muthesius credits the American furniture manufacturers with ingenuity and commendable regard for comfort in the construction of rocking-chairs, lounging chairs, certain varieties of armchairs, folding furniture, lawn swings, etc., "from which the foreigner can learn much;" refers in terms of commendation to America's achievements in the treatment of art glass, in which "America has opened positively new paths, and exerted a decisive influence even upon European art in very many directions;" lauds in similar terms American typography and book manufacture as superior in taste and certain features of workmanship to German production; eulogizes the illustration of books and magazines as "possibly on a higher level than that reached by any other country," and accords highest praise to American dressmaking.

*Woman's dress.*—The American woman [he adds] is to-day without doubt the best-dressed woman in the world. This is due in a large measure to the independence and high personal culture of American women. The English mode of the education of the fair sex and the universal respect for woman have been developed in America to a degree that brings to mind directly the Germanic cult of women in the middle ages. From this there has arisen a wholly free development of the character of woman, who, with clear consciousness and high estimation of her own value, knows how to secure herself in her position. As one of the manifestations of this self-reliance, we must view the feminine dress. It differs from the dress of the Parisian woman in its expression of the self-consciousness of its wearer. While the Parisian dress is determined exclusively by fashion and the dressmaker, the dress of the American woman makes the impression that she has herself aided in its fabrication, and that, at all events, her personal taste and adjustment to her corporeal and spiritual individuality have had great weight therein. While the Parisian wears her fashionable dress coquettishly, the American woman appears in hers with self-consciousness and with a personal bearing that compels respect. Her dress is less eccentric and artificial. It has as a whole more unity and is better planned than the Parisian fashionable dress. Above all it gives evidence of indisputable taste in the choice of color.<sup>b</sup>

On the whole, Doctor Muthesius deplors the fact that "with reference to industrial art the American exhibit [at Saint Louis] was less interesting and complete than those of other countries, and far below the expectations which the foreigner must necessarily bring to it."

*Machine work.*—To these statements Director Thormählen adds the following note on the character of American machine-made furniture:

This American machine work reaches out in a certain fashion toward the ideal of turning out simple, serviceable, and beautiful furniture at low cost, an ideal from which we are far removed in Germany. It is evident from the differences in the methods of work that it is not an easy matter to produce in large quantities by machinery furniture in the same forms as those made by hand. Therefore, if the

<sup>a</sup>Reiseberichte, pp. 120-131.<sup>b</sup>Ibid., p. 124.

machine work, too, is to become artistic in character the plans of the artist must be adapted to these differences in the method of production. This peculiarity of machine work by its own nature compels the artist to develop a peculiar style, and in such development the Americans are far in advance of us, while, on the other hand, they will require a long time to overtake us in hand work.<sup>a</sup>

[From report of Professor Schick.]

*Character of industrial art instruction.*—With reference to instruction bearing on industrial art, Professor Schick finds a tendency in its direction in the entire educational system of the United States. He writes:

The educational system of the United States of North America presents, like all else in this singular country, a character differing completely from ours. Its instruction is directed as much toward general culture as toward training in technical and art matters. And it not only differs from European systems, but it shows also the incongruous contrasts of high development and scarcely appreciable beginnings peculiar to every relation in the life of this country. But in one direction one great universal tendency pervades the educational work—the tendency toward the practical utility of what is learned. The amplitude and diversity of trade, the mighty development of the technical arts and of all factors depending on them, have brought it about that the whole American people is permeated by a technical spirit. And this technical spirit is revealed already in the public schools with their often magnificently equipped shops for wood and metal work, and their instruction in textile work and casting; it continues in the so-called high school, in the manual training schools, with their direct preparation for certain practical callings, up to the university. Connected with this, too, is the fact that great importance is attached to instruction in drawing, because drawing, on the one hand, is absolutely required in every technical vocation, and because, on the other hand, it affords the best foundation for the development of acuteness of vision for all external things in life. In this, too, it is significant that even the institutions that give the highest culture in drawing and in art generally, the academies, do not, as with us, pursue only the highest and ideal aims, but are essentially institutions for the training of illustrators of American journals and magazines, and are besides concerned, with few exceptions, with subjects of industrial art, such as pottery, bookbinding, and the like.

*Multiplicity of subjects in industrial art schools.*—A further peculiarity of American school organization—partly explicable from practical points of view but, perhaps, also due to the American idea that all that is practically serviceable is equally valuable and important—consists in the fact that the apparently most incongruous and disconnected subjects are found united in one and the same institution. The Pratt Institute in Brooklyn and the Drexel Institute in Philadelphia furnish in this regard the greatest examples. Thus, e. g., in the Pratt Institute, waiving university instruction, pretty much every phase of general and technical instruction from the kindergarten on is represented. And the Drexel Institute, an institution more for adults, has fourteen departments, \* \* \* as well as extensive collections, among them even a valuable collection of pictures. The universities, too, are organized very differently from ours, comprising not only the subjects current with us, but also all higher technical, agricultural, and other branches of instruction.<sup>b</sup>

*Other institutions.*—In further elucidation, Professor Schick mentions "technical schools, trade schools, and manual training schools" established and maintained by communities, private individuals, and church organizations. "Many of these have no further purpose beyond enabling young people in a few months to secure some ever so humble position, and then thru evening instruction in the same or other schools to gain further training and to fit themselves for better positions."

*Women as pupils and as teachers.*—As an especially striking feature of industrial schools and industrial art schools, he points to the participation of women in this work, not only as pupils but also as instructors and managers. He notes that while in Germany women are admitted as pupils by art-industrial, and even by commercial schools, the number of female pupils in American schools of art and art-industry is far greater than that of men. He is equally amazed at the great number of subjects chosen by them, finding them occupied "not only with designs for manual activities

<sup>a</sup> Reiseberichte, p. 147.

<sup>b</sup> Ibid., pp. 156-157.

adapted to women—bookbinding and the like—but also with the drafting of machines and architecture, nay even at the anvil, hammer in hand."

He finds them playing "a wholly extraordinary part," not only as pupils, but also as teachers; not only in schools of general culture, but also in industrial art schools and academies; not only in classes attended by women, but also in mixed classes; not only as teachers, but also as managers and directors.

*Equipment.*—He praises the equipment of these schools—naming in illustration Pratt, Drexel, and Armour institutes as instances—as "generally very good, and often decidedly splendid," the spacious auditoriums, and especially the character and extent of the collections of art-industrial objects, and their direct connection with the schools. Concerning these collections he adds:

Altho Germany naturally has much greater wealth of art-industrial collections and treasures than America, which lacks a great and artistically rich past, and altho our art-industrial collections are frequently, at least, under the same roof with the schools, the value of such immediate connection of schools and collections—a connection extending also to their management—can not be overestimated; and we behold here again the practical sense of the American, whose primary concern is not scientific completeness and the accumulation of all material of even the least bearing on the different subjects, but above all else that the exhibits should in some fashion enhance the value of his own productions and of the instruction given. By this, however, is not meant that the American does not know how to appreciate the scientific value of collections, for whosoever has seen, e. g., the collection of musical instruments at the Metropolitan Museum must have the conviction forced upon him that only the most exalted zeal and the completest disregard of cost could call into being such a collection.\*

Further on Professor Schick commends the establishment of restaurants in connection with the schools as a measure of great practical value, saving time and vigor, and bestows high praise upon the fact that not only the collection rooms, but also the class rooms and corridors are frequently decorated with the most beautiful and expensive photographs. With reference to the latter point he adds: "Even the public elementary schools enjoy such decoration, and many a German professional or industrial art school might envy such schools their costly heliogravures and photographs of Greek or Italian and the most modern French or English masterpieces of art." He deplures, however, that German works of art are met with only exceptionally.

*Lighting.*—The equipment of the class rooms he finds excellent in character and completeness, but criticizes the lighting. In support of his criticism he adduces instances in which he saw in laterally lighted class rooms two groups of pupils working from models placed on opposite sides of the room, as well as another instance in which some thirty students were seated in a large circle around a model, so that those placed in the rear could scarcely see to work and had their model wholly in the shadow.

*Teaching force.*—With regard to the teaching force, he finds first and foremost great lack of teachers; fears that in a number of instances "the teacher himself is deficient in the most necessary requirements, either of skill or conscientiousness or teaching ability," and expresses the opinion that "in spite of the reverence due to the fidelity, zeal, and other good qualities of the female teachers," the strong prevalence of the fair sex in matters of instruction is not a specially profitable feature of the American organization.

Consequently he does not consider the results of instruction as being of such a character as to give to Germans cause for the fear "that we are behind the Americans in industrial instruction." "Altho," he continues, "there is ample reason to acknowledge that the development of manual instruction in the public schools and in special manual training schools for practically technical instruction, in which we

\* Reiseberichte, p. 169.

are wholly lacking, is sound and in many respects worthy of imitation, nevertheless the specific industrial art schools or academies with art industrial instruction can not, even in their practical attainments, remotely compete with our special classes or schools for work in precious metals, pottery, forging, etc." <sup>a</sup> The same he holds to be true also with reference to instruction in drawing.

*Prospective.*—"How long," Professor Schick concludes, "the superiority of our industrial art instruction over that of the Americans will continue it is impossible to say. The extraordinary energy of the Americans, their practical sense, the well-known generosity of their rich citizens, and the wealth of the communities justify the prophecy that when once the deficiencies are recognized they will not rest until they have reached the perfection of Europe also in industrial education." <sup>b</sup>

[From report of Doctor Muthesius.]

*General criticism.*—Doctor Muthesius writes with reference to industrial art:

In contrast with the subjects heretofore considered [drawing, manual training, and trade schools] instruction in industrial art is somewhat behindhand. \* \* \* The American industrial art school is not as yet developed as such; it still bears more the character of a school of general art, to which only a few art industrial classes are appended. Now, the pursuit of instruction in general art, it is true, would not constitute a defect if it were founded substantially on technological considerations. This, however, is not the case. The course of instruction still is essentially that of an old-style art academy, in which the student, by the way of plaster casts and still life, slowly approaches nature study. It must be conceded, however, that the drawing from plaster casts is carried on in a free and sprightly fashion that is in no way pedantic, and, furthermore, that the life work connected with it is in a state of high perfection. \* \* \* In all art schools life work is considered of the greatest importance; nay, it constitutes the chief element in the instruction of every student. It is therefore no wonder that life work has reached a higher plane than in most of the German schools.

*Textile designs.*—Of strictly art industrial subjects, textile design receives occasionally some consideration, but the results are mostly mediocre, and above all there is no trace of the modern spirit that pervades to-day the English and German art industrial schools; still less does one find a continuation of the happy beginnings in flat composition and the tasteful color combination with which one has become familiar previously in the drawing of the elementary and middle schools. Nature study in the form of the drawing of plants receives more or less attention, but rarely from that standpoint of technological applicability which is in place in an art industrial school.

*Shop instruction.*—Shop instruction has scarcely entered the American art school. Only in isolated instances a few workshops are found; thus, e. g., in Chicago a fairly well attended ceramic workshop. Bookbinding, too, is found in some schools; also occasionally a class for embossing, engraving, and wood carving. On the whole, however, the workshop is an interloper of most recent date, and has not as yet by any means acquired the right of citizenship. It should, however, be emphasized that quite recently workshops have come into favor everywhere, but chiefly so far in connection with the general instruction in drawing in the middle schools. <sup>c</sup> The technological spirit which in Germany prevails in the industrial art school is to be found at the present time only in the drawing and manual training of institutions of general culture.

To this Doctor Muthesius adds at the close of his report the following instructive résumé of his impressions concerning industrial and art training, including drawing and manual training:

*Common school instruction in drawing.*—In spite of the many peculiarities of American industrial and art education, the suggestions which the European schoolman carries away with him from America are most prolific and persistent. The common school instruction in drawing was an absolute revelation. There are here hints whose value can not be minimized by anyone. The whole matter is attacked from a new point of view. While current instruction in drawing in Europe was a transferral of

<sup>a</sup> Reiseberichte, pp. 161-162.

<sup>b</sup> Ibid., p. 171.

<sup>c</sup> Ibid., pp. 140-141.

academic principles to the children's school, in which the child as an intellectual organism received but little consideration, American instruction in drawing is linked in every grade with the natural instinct of activity of the child. It rests upon an intimate study of child nature. The results correspond with this sound fundamental principle. They can not even be minimized by the observation already made that the upper classes do not wholly fulfil what the lower classes promise. It would be a worthy task for Germany to organize this fundamentally correct system of education in such a way as to eliminate the imperfections it shows here. \* \* \*

*America has opened new paths.*—Both in drawing and manual training America has opened new paths and furnished an example for the whole world. The quick apprehension on the part of an energetic and practical people under the most flourishing conditions of growth has here vindicated the value of points of view that could scarcely have found consideration in the old, learned European world, hampered by theories and prejudices. The great importance of the two subjects lies in the fact that they have to do with the foundation of technical and art education. America has here, as it were, begun at the bottom, and, in view of this fact, it does not matter so very much that higher instruction is not sufficiently developed and matured.

Perfection may be attained as soon as the general development demands it, the more so as an increasing desire for culture on the part of the people is linked with a lavishness in the employment of means and an energy in the carrying out of plans of recognized correctness which perhaps to-day are to be found in America alone.

*Industrial and art instruction being rapidly developed.*—With reference to industrial and art instruction in America the general impressions gained in a tour of inspection will also apply: One finds no really finished cultural results, one is disturbed at every step by imperfections, and yet no other country to-day affords even approximately so rich a harvest of suggestions. Here a thousand germs await future development. Everything urges forward, as yet unhampered by reactionary tendencies; the unfinished and the incomplete eagerly seek perfection. We find ourselves in the midst of the fermenting development of a still youthful people. All the deficiencies of youth are still there, but they are richly compensated by its points of excellence, by its enthusiasm, its cheering hope, the steadfast faith in its success."

[From report of Professor Schick.]

Professor Schick closes his report with a discussion of a number of points of interest, wherein he sets forth the bearing of his observations in England and America on instruction in drawing and art industry in general, but more particularly in Germany. A succinct synopsis of portions of this discussion is here presented:

*Drawing.*—In the first place, while he approves the abandonment "of the former exclusive drawing of solids and ornaments" in German schools of general culture, he fears that instruction has fallen into another extreme and does not sufficiently consider that in the artistic education of a people (which is the object aimed at, as well as certain practical ends), it is not enough to train the pupils in the simple and realistic representation of objects of nature, for, altho this contributes to the education of the eye and the cultivation of taste, the work of the pupil will in comparison with the work of the artist, always be deficient and bungling to a certain degree, and the pupil will not be able to attain an appreciation of truly artistic work if he lacks opportunity to compare his work with that of a real artist. He will, on the contrary, be led to consider his own defective work as artistic, and "we shall run the risk of getting results similar to those of America, i. e., superficial attainments in drawing, and the necessity, when later on strictly artistic forms are required, of beginning over again." This can hardly fail to affect all who subsequently choose an industrial or art industrial calling or architecture, thus proving an injury to many of our people, while in America a palliative for this excessive freedom in drawing is afforded in the practical work in the shop, requiring the greatest care.

*Ornament.*—He recommends, therefore, for the cultivation of hand and eye, a wider use of ornament in German elementary schools, and also the utilization of many of the points in Dow's doctrine of composition, which, however, he does not designate. He deprecates the tendency to exclude the copying of good art drawings or good plastic models, considering such training indispensable in order "to learn the language

\* Reiseberichte, pp. 142-143.

† Ibid., pp. 172-173.

of art," and pointing to the utterances of Da Vinci and the practise of Rubens and Lenbuch in support of his position. He is confirmed in this position, too, by seeing that "not only in conservative England, but also in progressive America, this training in drawing from plaster models of ornaments and heads has been retained in art industrial schools and academies and is everywhere carried on to a certain extent." Similar remarks apply to the drawing of columns and historic ornament.

*Decoration.*—He directs attention to the neglect in America of decorative painting and the comparative lack of ornamentation, both in schools and in industrial art products, and adds: "Altho in many instances this is to be attributed to want of needed practise and sufficient skill, and not, primarily, to views and principles of art, this reduction of forms to utmost simplicity meets the taste just now current with us. The present reaction against an excess of ornamentation \* \* \* is a healthy one. For so long as we do not prefer an object that is simple, but good in fundamental shape and well constructed, to one made from inferior material and surcharged with questionable ornament, we have no claim to be considered as an esthetically cultured people." While, therefore, Professor Schick holds that the discontinuance, or, at least, the extreme restriction of decorative drawing in trade schools and industrial continuation schools would benefit industrial art, he does not admit "that its appropriate use is not justifiable and pleasing." Consequently he sees "no reason why in our industrial art schools we should adopt the American idea and allow ourselves to abstain from placing at the disposal of our pupils the resources of art for the richer and richest decoration of the most varied objects."

*Shopwork.*—With reference to shopwork in the public schools, he is so pleased with its bearing on all-sided development and with the sight of the zeal of the American boys working at the benches that he is inclined to recommend its adoption for Germany, were it not for the complete transformation of the entire school organization entailed thereby.

With reference to shopwork in industrial art schools, he maintains that the special professional instruction in most of the German classes—in fresco painting, modeling, wood carving, engraving, etc.—already bears the character of shopwork; and continues: "If we add to these our numerous technical schools for special branches of industrial art, which in America are almost wholly lacking, there is no doubt that in art-industrial workshop instruction we are not only not behind the Americans, but surpass them by far. For we have seen that art-industrial instruction, in America as well as in England, is mostly carried on as incidental instruction in academies, which is equivalent to saying that also with the worker in art industry the general artistic culture is looked upon as the more important consideration."

#### TECHNICAL COLLEGES AND OTHER ADVANCED TECHNICAL INSTITUTIONS.

[From report of Professor Götze.]

The most connected view of these institutions is contained in Professor Götze's report, which also dwells on the points of contrast with corresponding institutions in Prussia. In the term "technical colleges" he includes polytechnic institutes, schools of engineering, and other technical schools of advanced character, and contrasts these chiefly with the technical "high schools" (of university rank) and the higher and lower schools for machine construction of Prussia. In the following synopsis the chief stress is on the organization and work of the American schools.

In a few introductory paragraphs he directs attention to the share which wealthy industrial leaders and prominent men of learning had in the establishment of such schools, and gives credit to the Morrill Act of 1862 for its determining influence in their wider diffusion.

*General character.*—The majority of the American schools of this character, he reports, are not of a special character, but include also the departments of the German universities or are themselves departments of such universities. This he holds

to be due to the fact that at the time of the establishment of technical colleges the existing universities themselves had not as yet been definitely organized, to the example of England, and to certain features of the Morrill Act. Moreover, American technical schools almost all aim to be of collegiate or university rank, whereas in Germany there are three grades of school of this character, viz., the technical universities and the high and elementary mechanical schools. This difference is owing to the circumstance that at the time of their origin there was need in America of men with technical-college preparation in leading, but not as yet in subordinate, positions. "Even in later years," he adds, "there was no special need for the establishment of schools of lower rank." Moreover, "in consequence of the extraordinary development of industry in newly opened regions of the United States, the demand for scientifically trained managing engineers has continued so brisk to the most recent days that the existing schools scarcely sufficed to supply the demand."

Other reasons why a school training was not so generally provided for subordinates he finds in the comparative feebleness of social and class distinctions, the high estimate placed on purely practical as compared with intellectual work, the consequent disposition to promote workers trained in the school of practice to higher positions in factory and office, and the prominent tendency to specialize and to standardize in machine construction, which latter served to enhance the value of practical experience and purely mechanical work.

Moreover, the need of trained material for lower positions is not felt, inasmuch as graduates of technical colleges pass thru such positions on entrance into practical life, for the purpose of initiation in practical work.

*Courses.*—As to the courses of the technical colleges in contrast with those of a Prussian school, Professor Götte selects the technical high school at Aachen. He notes "at once the following material differences:"

1. The courses of study of the technical colleges include in most instances a number of subjects of instruction which with us are disposed of in preparatory institutions, more particularly the modern languages (English, German, French), history, and lower mathematics.
2. Instruction in chemistry and the exercises connected therewith have much more time allotted to them than in Prussian institutions.
3. The same is true of exercises in the physical laboratory and in the laboratory for machine construction.
4. The courses of instruction (in American schools) include not only scientific instruction, but also "practical work" in the school workshops.

Another sharply pronounced difference he finds in the treatment of the material of instruction, in the fact that, contrary to the expectation of the European visitor of a decided leaning to practical affairs in the technical instruction, he meets in many instances the very opposite, viz., strong emphasis upon theory and neglect of actual sketching and constructive design.

The strong emphasis upon chemistry he looks upon as a survival of the beginnings of technical instruction, "when, in consequence of lack of material in purely technical branches, there was time for such subjects of instruction," and doubts whether the mechanical engineer can derive adequate benefit from such extensive practise in qualitative and quantitative analysis.

*Mechanical laboratory and drawing.*—He notes the prominence given to work in the mechanical laboratory, but is astonished at the small number and indifferent character of the drawings made by the students in their instruction. These he declares to be in many respects inferior to the drawings found in machine shops, and is inclined to attribute these faults to the fact "that drawing and sketching in many instances are not given in connection with the corresponding lectures, but as an independent subject."

As contrasted with this insufficient treatment of drawing and designing the strong emphasis upon work in the mechanical laboratory seems to him excessive. "With

the current system," he adds, "they do not get out of experimenting and criticizing. Already in the lectures everything is critically examined; this is followed by criticism on the basis of experiments in the laboratory; independent productive and creative doing, as represented in designing, is scarcely ever reached."

It is sometimes maintained [he adds] that the American students by this extensive activity in experimenting at the school are trained in independence, because thereby they are enabled to create for themselves the conditions for the solution of new problems with ease and certainty; also one often hears that the American schools intentionally teach only what the students can not learn in practical life.

All this may be true to a certain extent, but it is equally true that training for independence requires not only a critical, but also a creative activity, and that practical life in the various positions affords not only opportunity for training in designing, but also in research.<sup>a</sup>

In the inferior development of American technical instruction on the constructive side he sees one of the reasons why American machinery, with the exception of tool machines, is in many instances imperfect.

*School workshop.*—As wholly lacking in the Prussian system, he designates the school workshop, which "may be an imitation of the same devices in Russia and France." He finds, however, further reason for this in the following considerations:

American machine construction is much more specialized than with us; apprenticeship in general is in many instances displaced by a system of young workers trained in a very limited specialty. But to give such a special training to a future [mechanical] engineer has no purpose whatever; on the other hand, it is repugnant to the active American to have persons loafing as volunteers (unpaid learners) in the workshop without serious occupation; in short, the American factories are in general less fitted for the practical training of future engineers than ours and, therefore, systematic training in a school workshop, altho it can not be considered ideal for the given purpose, may be preferable to volunteering in an American factory.<sup>a</sup>

He reaches, on the basis of the foregoing considerations, the conclusion that "Prussian graduates must be superior to American graduates, not only because of better preparation on entering the technical institution, but also because of the more effective formulation of the courses of study."

*Intermediate officials.*—He next discusses the adaptation of American technical colleges to the training of "intermediate officials" (machine constructors and superintendents), and reaches the conclusion that they meet these requirements to only a limited extent.

As constructor [he adds] the intermediate official must above all things be an efficient draftsman, and it can not therefore be left to practical life alone to train him in this. Furthermore, he must know and be able to compute approved forms of construction. On the other hand, it will not be his duty to engage in further research. For his training, therefore, thoro instruction in drawing and construction will be needed, while the study of higher mathematics and higher mechanics can be dispensed with and instruction in the mechanical laboratory can be reduced to a comparatively limited amount.

Similar considerations apply to the factory officials of intermediate grades. As a further requirement there enters here also sufficient practical experience, to be gained in a manufacturing establishment.

All these requirements receive only limited consideration in the courses of instruction of the technical colleges, with their strong emphasis on theory and research work, and it is evident that these schools are not particularly well adapted to the training of the intermediate technical officials.<sup>b</sup>

*Prussian organization.*—A concise sketch of what Professor Gütte considers as the distinguishing characteristics in the organization of Prussian technical "high schools" (of university rank) may prove interesting. He writes:

In Prussia the difference between the organization of the technical high schools [of university rank] on the one hand and that of the middle and lower technical schools on the other hand is strictly observed.

<sup>a</sup> Reiseberichte, p. 225.

<sup>b</sup> Ibid., p. 225.

In the high schools there is freedom of teaching and learning; the young men receive their complete mental equipment for later scientific progress; the professional instruction is conceived on a large scale; they do not enter into the most minute details, but leave it to the student to avail himself also of professional literature and other material for study.

On the other hand, there prevails in the schools for machine construction compulsory attendance; the subjects of instruction are uniformly prescribed in the courses of instruction for all schools; instruction does not take the form of lectures, but is teaching (imparting of knowledge) in the strictest sense of the word thru the giving of information, question and answer; the teacher must to a certain extent incur the responsibility for the work of the pupils, and the professional instruction is directly adjusted to the needs of a future constructor of details or factory official. The constructions and drawings, therefore, are derived almost without exception from original plans, which serve as models and which are obtained from good machine shops and kept in the collections. Larger sketches are as much as possible avoided; on the other hand, the greatest stress is laid on the execution of correct workshop drawings.<sup>a</sup>

In subsequent pages he gives a full account, without further comment, of the organization and courses of study of the Massachusetts Institute of Technology, the Worcester Polytechnic Institute, the Stevens Institute of Technology, the School of Engineering of Columbia University, Sibley College, the Urbana (Ill.) College of Engineering, and the Drexel and Pratt institutes.

More favorable in many respects are the reports bearing on Technical Colleges by Councilor Beckert, Director E. Beil, and Director Sellentin.

[From report of Councilor Beckert.]

*Requirements for admission.*—Councilor Beckert, in his treatment of engineering schools of universities and colleges, first notes that while none of them require for admission graduation from a college, a number of them place their requirements so high that graduation from a high school can not satisfy them and consequently recommend previous college attendance; that most of them, however, are content with graduation from a four-years high school, and that a few of them are even more lenient.

*Character of the instruction.*—His further remarks he proposes to base on an institution which requires only graduation from a four-years high school, and continues:

But, however light the requirements may be, instruction in the fundamental sciences goes further everywhere than in the higher schools for machine construction in Prussia; everywhere in mathematics, e. g., the infinitesimal calculus is studied. On the other hand, on the theoretical side of professional instruction proper, the technical colleges probably do not come up to our schools; at any rate, this instruction is less specialized, and is limited, in the main, to motors and transmissions, for in none of the numerous courses of study examined and in none of the schools visited did the reporter find instruction in lifting and tool machines.

This deficiency in theoretical instruction is, however, amply compensated by the much stronger emphasis on experiment. The exercises in the laboratories occupy so large a place in the course of instruction that, in fact, every student has opportunity to familiarize himself thru his own experiments with the natural laws whose application is taught in the technical sciences, with the testing of construction material, with the care and testing of steam boilers, and machines of every description, and with much else.<sup>b</sup>

With reference to the method of instruction, he writes further on:

In theoretical instruction most of the institutions deviate very much from the method current in Germany. The low weekly number of lesson hours (on an average 30) indicates to how considerable an extent the independent activity of the student is utilized. This consists in the study of text-books, from which, from lesson to lesson, sections are assigned. The teacher's activity, then, consists chiefly in questioning the student as to what he has learned, in giving him practise in the solution of problems on the blackboard, and in explaining the parts not understood. This is supplemented with lectures, combined with experiments, according to the character

<sup>a</sup> Reiseberichte, p. 227.

<sup>b</sup> Ibid., p. 229.

and requirements of the subject. The instruction in the mother tongue consists largely of practise in extemporaneous speaking and in debating, and has, therefore, the purpose of preparing for public life.<sup>a</sup>

*Labor-saving devices.*—Councilor Beckert mentions with approval "the extraordinary development of helps in teaching, which save labor for the students," such as typewritten and manifolded synopses of lectures, numerical tables, and diagrams, which save copying, also blueprints, etc.; devotes a paragraph to the advantages of distributing manifolded problems, thus avoiding "time-consuming dictation," and another to the extended use of the stereopticon, and, more particularly, to the photographic enlargement of stereoptic views. "These facilities," he adds, "require, however, assistants, who are employed in amazing numbers in the American schools, but are wholly lacking in ours."

*Drawing.*—With reference to drawing, he shares to a large extent the unfavorable view of Professor Götte. "They spend too much time on preparatory exercises," he writes,<sup>b</sup> "and in many instances use antiquated methods. In mechanical drawings the median lines are often lacking, the entering of measurements is incomplete, almost universally shading lines are used to emphasize form, and shading is still done with hatching lines. The coloring of materials is scarcely ever used."

On the other hand, methods of work were observed that are worthy of imitation, such as drawing upon a very firm but very thin paper, which admits of the immediate production of blueprints of the original drawing; the extensive use of ~~square~~ ruled in squares, facilitating and expediting the work; rapid sketching in ~~five~~ given time (twenty down to four minutes); sketching in axometric projection for the cultivation of the perceptive faculty; the giving out of very simple sketches of two projections of a body to be represented, from which the third projection, sections, etc., are to be derived. The model itself they merely exhibit before the student, and therefore a single model will suffice for many students. Compared with the practise in Prussia, of letting each student draw directly from the model, this means a very considerable economizing in the teaching apparatus.

He closes his report on this phase of technical instruction, without further comment, with a somewhat detailed account of laboratory exercises.

[From report of Director Sellentin.]

In his report on shipbuilding, etc., Director Sellentin devotes several paragraphs to technical instruction. On the whole he agrees with his colleagues, yet the following notes may be of interest:

*Workshop practise.*—With reference to the workshops connected with technical colleges, he writes:

The work in the school shops has the one advantage over the work in factories current with us—that the student is systematically trained and that the lectures can go hand in hand with the practical work. \* \* \* In spite of the short time [221 to 718 hours] it is possible to attain very satisfactory knowledge of work and manual skill, while the German factory students and volunteers [unpaid learners] frequently manifest an amazing ignorance of the simplest kinds of work. \* \* \*

The method, however, has the disadvantage that the student remains ignorant of the conditions under which the work must be carried on in the factories, and that he remains a stranger to intercourse with the workmen. A combination of the American and German methods—one year of shop practise in a factory before entering the school and systematic training in the school workshop during a three years' course of instruction in connection with the instruction in technology—might yield for the middle professional schools the most favorable results.<sup>c</sup>

*Laboratory practise.*—In the laboratory practise he recognizes "the best part of American technical instruction;" acknowledges the stress laid on simplicity in the experiments, exactness of measurements, and clearness of records—the record books being models of excellence; praises the completeness of equipment, and adds "that

<sup>a</sup> Reiseberichte, p. 290.

<sup>b</sup> Ibid., p. 291.

<sup>c</sup> Ibid., p. 292.

pupils on first entering the school are required to prove that they have worked in physical and chemical school laboratories, and that consequently they have already had not inconsiderable practise in observing and measuring."

*General impression.*—The general impression [he concludes] left by the inspection of American technical schools is throught favorable. It is true one is at first inclined, from the apparently insufficient treatment of constructive branches, to conclude quite generally that the instruction in them is superficial; yet this would do injustice to the institutions. That improvement is needed, in this respect has been repeatedly acknowledged by the parties concerned, and a serious effort is being made to eliminate the chief cause of this defect, viz., the appointment of teachers who are too young and inexperienced. On the other hand, the defect is not felt to be of much consequence. According to the American idea, it is the chief business of the schools to treat that side of technics which the pupil can not learn in the experience of practical life; hence the strong preference for experiment and theory by which evidently much good is accomplished. The student is not to be graduated as a finished engineer of construction, but he is to be enabled to work himself readily into the requirements of practical life on the basis of the understanding of technical processes he has acquired.

The method of instruction distinguishes the institutes of technology sharply from our superior schools; the students throught are lookt upon and treated as pupils. Therefore they enter upon practical life without any special pretensions, whereby it becomes easier for them to work their way in. Frequently the younger graduates of technological institutes of recognized excellence are found in the positions of assistant overseers or foremen; that in the office, too, they are at first employed in the simplest tasks has already been mentioned. Reasonably intelligent and efficient young men, thanks to the desire of American firms to secure for the office above all things energetic and versatile people, can secure comparatively rapid promotion, and while at present many leading positions in the shipyards are in the hands of men who obtained their training abroad, the time may not be distant when North America will be able to meet herself her demand for shipbuilders with thoro scientific training."

[From report of Director Bell.]

The report of Director E. Bell on iron and steel ware is of an almost purely technical nature, yet it contains some observations on American education and its influence upon industrial development which are worthy of notice.

*American experts more practical than German.*—After repeated favorable comment on American tool manufacture and machine work, on the principle of American factories to produce their wares "in only one and that the best quality" and on the "standard system," on the progressive energy and inventive genius of the American manufacturer and artizan, and on the practical spirit and "high technical intelligence" of all concerned in the work, he writes:

The American technical expert is far more practical than is the case with us on an average. Scientific pondering he leaves to future generations. His scientific training, therefore, measured by our standard, is inferior to ours. On the other hand, his technical knowledge and skill are based on a self-acquired fund of practical experience, and it is by reason of this that he accomplishes so much that is excellent in a field in which success may indeed be attained by a certain degree of scientific insight, but which demands first and last a many-sided and rich workshop experience, an eye trained in observation, and a mind accustomed to inductive thinking.

To this must be added that in America education and instruction influence practical and productive work very favorably thru the circumstance that they develop, in much higher measure than is the case with us, skill of hand and eye, which is the first requirement in industrial work. In addition, American instruction deals with the actual more intensively than ours does, inasmuch as it installs the young in amply equipped workshops and physical laboratories for effective practical work and experiment. By this they not only keep awake, in all stages of development, the interest in practical doing and respect for it, but they encourage the independent acquisition of experience, and thereby of information which takes a firmer hold than the knowledge of others transmitted orally or in writing. This trains the faculty of observation, quickens the judgment in practical things, and accustoms them early to act in the pursuit of their calling on the basis of independent thought and consequently with conviction.

\* *Reiseberichte*, p. 223.

\* *Ibid.*, p. 224.

[From report of Professor Gürtler.]

The report of Professor Gürtler on the textile industry and that of Doctor Pukall on ceramics contain, respectively, paragraphs on special schools devoted to these subjects, but these are almost wholly descriptive and without comment, so that their consideration may be omitted here. Nevertheless, the following remarks of Doctor Pukall on the general and industrial character of the American people may prove interesting to many readers. He writes:

*Character of American people.*—On the 20th of October we entered upon our home journey on a Hamburg-American steamer. The picture that I was able to gain in so short a time [some six or seven weeks] of American conditions was only a hasty one, but yet sufficient to dissipate within me completely the current views of America and the Americans. In place of the heartless and unfeeling band of men, eager for exploitation and running after the dollar, that was supposed to carry on its wretched business in that country, I had found an industrious, progressive, amiable, infinitely hospitable people, and—as far as I came in contact with them—of child-like harmlessness. \* \* \* At heart the American people are sound and above reproach. \* \* \* The colossal extent of his [the American's] country and an imposing nature impart to all his enterprises a grandeur which does not exist with us in the same measure. The superabundance of natural and other resources invite exploitation, utilization, and study, and lead wholly of themselves to a magnificent industry. The American loves his country with every fiber of his being; and whoever praises it is at once received as a friend. It is true he is trained to this patriotism in the first place in the school, in a measure not found among us, but in a large part it has probably grown with him in his environment. And this love for his country is not the least factor that urges him to exert all his strength in order to make it great and beautiful, rich and powerful, excelling all the world. But it is also a sober-minded, healthy, and vigorous people that this soil brings forth, and which is formed from the blending of the numerous fragments of nations that stream together here, a people wholly fitted to undertake the above-mentioned gigantic task and to accomplish it at any cost. In this sense America is, indeed, the land of unlimited possibilities. It is true in many fields it is still behind Europe. About this there exists no doubt, but when we know with what energy the people work, with what zeal they study our publications, how they shrink from no expense in order to establish and maintain schools upon schools, experimental institutions, and museums, we also know that it will not be long until they will take their place at our side, not only as equals, but, possibly, with superior power.

*German competition.*—But what shall then become of Europe, what of our little Germany, that is not even of the size of Texas, when this as yet slumbering but already on the point of awakening giant arises? Yet we, too, are a youthful people. Our task will be tenaciously to hold fast the advantage that our older culture has given us over the Americans, and not to allow ourselves to be overtaken in the race; not to sleep upon our laurels, but to be vigilant. Not "How can I make it cheaper," but "How can I make it better," must be our motto, as it is that of the American. If our realm, in comparison with that of America, is too small and the resources of our soil exhausted, we must get what we lack elsewhere; the sea affords ways enough thereto. But we must also be strong enough that they be not one day closed to us. Our science and art, instead of lingering in the dreary paths of ideals, must actively enter the field of public economy, the work of daily life, and bring forth things of value; then shall we achieve still greater and more lasting successes than those which, to the astonishment of all nations, our industries have just attained at St. Louis. Then, for a long time, there will be no need to fear America. A trip thru the harbor of Hamburg is exceedingly quieting to one who returns from America oppressed by all sorts of doubts and fears. We are already in the fairest way of success; may we continue in it. "Our future lies on the sea."<sup>a</sup>

APPRENTICESHIP AND TRADE SCHOOLS.

[From report of Director Back.]

The report of Director H. Back deals with the training of industrial workmen. After a number of introductory paragraphs concerning the general character of American industries, in which he directs attention to the influence of machinery, the lack of efficient skilled workmen, the decay of former methods of apprenticeship, he

<sup>a</sup> Reiseberichte, pp. 416-417.

discusses the efforts of a number of the larger industrial establishments to supply the demand by new methods.

*Methods of training by industrial corporations.*—Among these he describes succinctly the methods of the Baldwin Locomotive Works, the Allis-Chalmers Company, and a few others. He finds three classes of apprentices in the Baldwin works. The first of these includes young men with elementary school training, enrolled for four years, with a graduated wage of from 5 to 11 cents per hour and a final bonus of \$125; they receive an allround practical training in machine construction by means of taking up in regular rotation the different kinds of shopwork; and, during the first three years, they attend at least twice a week a night school in which they are taught the elements of algebra and geometry and the rudiments of technical drawing.

Of the apprentices of the second class advanced elementary or high school training is demanded; they are enrolled for three years with a graduated wage of 7 to 11 cents per hour and a final bonus of \$100; during the first two years they attend a night school for technical drawing.

The third class is composed of graduates of colleges, technical schools, or scientific institutions, at least 21 years of age, and enrolled for two years of practical work, with a graduated wage of from 13 to 20 cents per hour, but without final bonus.

The results of this system he designates as satisfactory in every respect, and the same judgment applies apparently to similar systems in other large industrial works.

On the other hand, he finds that in smaller industrial concerns in the larger cities apprentices receive practically no technical training after old methods, and that this is met only in the smaller towns and in the country.

*Attitude of the trades unions toward industrial training.*—Further on, he directs attention to the inadequacy of legal provisions in a number of States, both in their requirements and in their enforcement, and to the attitude of trades unions. Among the latter he finds, on the one hand, a desire to exclude insufficiently trained workmen, and, on the other hand, a tendency to keep down the number of workers in the different trades as much as possible. Nevertheless, he holds that they are earnestly interested in the social, moral, and intellectual elevation of their members. With regard to the regulations of a number of unions he adds: "It must be recognized that these regulations, issued by the workmen, might contribute to the stimulation of apprenticeship if they were everywhere observed. It is by no means certain that the motive for the regulations of the trades unions is exclusively a pecuniary one—and I have gained the impression that it is not so; it is quite possible to connect them with the establishment of a more perfect training of apprentices." As such desirable regulations, he quotes the clause requiring every workman to give professional instruction to the apprentices, and the one making it the duty of the foreman to see that the apprentice is trained in his calling to its full extent.

On the other hand, "it can not be denied that thru the measures taken by the unions the hands of the business proprietor who depends on them are tied in the matter of the selection of apprentices; and that, similarly, he must feel as a limitation of his liberty the rule that differences between masters and apprentices must be submitted to the executive committee of the union."

*Mechanics' institutes.*—In a subsequent section Director Back discusses institutions devoted to industrial training. He introduces this discussion with favorable mention of the Mechanics' Institutes of Cincinnati and Rochester, and adds in regard to the latter, but apparently as referring to both:

The purpose of the institution is not to teach trades, but to train the pupils to work thoughtfully and to familiarize themselves with the "why" and "wherefore" of what they do. The methods of work employed in the workshops of the school have proved effective; they have promoted the development of the institution and of the industries, as well as the success of the pupils. According to the statements of indus-

trial leaders, the institute has increased the intelligence and efficiency of the working class in general, and promoted industrial, educational, and social development in the world of work. The graduates of the school are preferred to workmen trained exclusively in workshops by a master workman, because they are better prepared. They make more rapid progress and are more reliable than those who have had no technical training. Many manufacturers receive young men as apprentices only on condition that they attend the evening department of the institute. <sup>a</sup>

*Reformatories.*—With a few approving words, the "industrial schools" connected with State institutions of a reformatory character are then mentioned. The completeness of the instruction and training and the efficiency of the boys are praised. "That the instruction in these institutions has educational value appeared from the evidences of order and good conduct on the part of the boys. With even limited interest on their part, they can leave the school with effective practical ability and with the information necessary for their success in work, and become useful members of society."<sup>b</sup>

*Trade schools.*—The comments of Director Back on trade schools are based on an inspection of the New York Trade School (established by Colonel Auchmuty), the Baron de Hirsch Trade School, the Philadelphia Trade School, the Evening Trade School of Boston, and the Williamson Free School of Mechanical Trades.

The essential difference between shop instruction by a master workman [direct apprenticeship] and instruction in the workshops of a trade school is found in the fact that in the latter the execution of pieces of work is preceded by thoro explanations. These extend to tools, their handling, and the manner in which the work is to be done. The instruction is systematic, and the pupil will make progress in his calling and gain new information with every new piece of work intrusted to him, which, unfortunately, is not always—to-day even very rarely—the case in direct apprenticeship with a master workman. The pupil is kept busy exclusively with work connected with his trade, and is not interrupted by matters that are wholly foreign to it, as is frequently the case in direct apprenticeship. For this reason, the time required for learning a trade can be materially reduced in the trade school as compared with the time fixt for direct apprenticeship. <sup>b</sup>

*Manual training.*—He concludes this feature of his report with a reference to the manual training schools connected with the system of public instruction and the attention given to hand work in every department of the public schools. This, he holds, will have "an influence, that can not be overestimated, upon the future development of industry and trades in the United States."

*Needs of Germany.*—In applying the results of his observations to the needs of Germany, he writes:

In order to enhance the achievements of German industry, the institutions for industrial instruction must, more than heretofore, make it their concern to promote industrial activity, not alone by theory and technical skill, but chiefly also in a practical direction. Auxiliary sciences and a few accomplishments aiding the manual activities of the industrial worker, such as drawing, painting, and modeling, are no longer sufficient. To teach in the schools their practical application appears to me, after my repeated observations in America, to be an urgent need. The American, with his practical sense, soon recognized that education must aim not only at intellectual development but also, and prominently, at physical alertness at the training of hand and eye. Consequently, he has taken hold of and developed in noble fashion, in his technical and general system of education, the educational methods of the old world that seemed to him most suitable, such as *sojld* and workshop instruction. In this, Germany must not remain behind if she wishes to become a successful competitor in the world market.

Therefore the German workman must above all be afforded sufficient opportunity for work in the workshops of institutions for industrial instruction in order that he may become familiar, among other things, with methods for the production of technically difficult and artistically refined work, as well as sufficient practise in such production. Not only his knowledge, but also his ability to do, must be lifted to a higher level, considering the inadequate trade instruction in Germany. This requires an equipment which is lacking in many of the German institutions for trade

<sup>a</sup> *Reiseberichte*, p. 53.

<sup>b</sup> *Ibid.*, p. 55.

instruction, or at least is not of the character and extent met with in the more recent trade and technical schools of the United States. As to the workshops and laboratories of these latter institutions, they are, in their equipment in machines, apparatus, and tools, as well as in regard to hygienic requirements, excellent and worthy of imitation. They offer to the workmen, who, during the day, are engaged in earning their living, frequently under quite unfavorable conditions, places of real recreation for their school work, where the very surroundings stimulate desire for and love of work.<sup>a</sup>

[Report of Councilor v. Czihak.]

Councilor von Czihak devotes a section of his report to trade schools. His presentation is almost exclusively descriptive of the organization of a number of typical institutions of this character, and contains no comments nor recommendations.

[From report of Professor Gütte.]

*Trade instruction in America and Germany.*—Professor Gütte in the comments of his report agrees essentially with Director Back respecting trade schools, but adds, with reference to their general organization: "Two things must be specially emphasized concerning trade schools—in the first place, the excellent character of the workshop or practical instruction; and, in the second place, that these schools in their essentials deal only with trades whose future is not threatened by factory work."<sup>b</sup>

Further on he adds:

Among Prussian institutions only the schools for special trades (Spezialfachschulen), the industrial art schools and schools for artisans (Handwerkerschulen), and the numerous recently organized courses for master workmen, can be compared with the trade schools.

The schools for special trades, which afford, besides theoretical, extended practical shop instruction, are limited to the training of workmen for the hardware and cutlery industry and for the bronze industry. On the other hand, the industrial art schools and the schools for artisans do not pay as much attention to shop instruction as is customary in the [American] trade schools, and the stress with them lies more on the art industrial than on the handicraft side of the training. The handicraft side of the training is therefore left with us more to the actual work in the various trades. That this kind of training, just as in the United States, is quite defective, can not be doubted; this is acknowledged, too, in that for many trades courses for master workmen have been organized.

These courses for master workmen, however, can not pay sufficient attention to the younger members in the trade, and in this respect we may still learn from the [American] trade schools.<sup>c</sup>

*Evening trade schools.*—With regard to evening courses for the training of workmen who can not attend instruction in the daytime, Professor Gütte writes, among other things, that such training is not so well developed by far as in Germany, but also that so far as it is organized it merits praise.

It is a characteristic feature [he continues] that the courses do not contain subjects of instruction, such as the English language and arithmetic, that are treated in the elementary school, and that there is no class system that would compel a pupil to take up subjects of no interest to him. Besides courses in mathematics, natural science, mechanical drawing, electrotechnics, mechanism and mechanics (Maschinenkunde), there are also courses in "machine inspection" and in "practical work." This may be deemed additional proof of the fact that the practical training in actual shops is not thought to be sufficiently varied.

With us, in the evening and Sunday courses connected with the schools for machine construction, we have not as yet been able to rid ourselves wholly of the idea that in this, as well as in day instruction, a broad general culture is the indispensable foundation for the technical instruction. The class system has therefore been maintained thruout, which compels the pupil to pass thru the entire preparatory course before he can reach the technical instruction that interests him chiefly.

The first semesters contain mostly only German, arithmetic, mathematics, physics, and geometrical drawing. All these are subjects of instruction whose practical value

<sup>a</sup> Reiseberichte, pp. 94-95.

<sup>b</sup> Ibid., p. 228.

<sup>c</sup> Ibid., pp. 228-229.

is not sufficiently evident to the pupil, and which therefore are tedious to him; before he can reach technical instruction he is tired of the work. Moreover, it is the wish of a workman, and more particularly of an older workman, to acquire some skill in drawing, or to gain information thru an easy course of instruction concerning some definite department of machine construction, but to be spared German, arithmetic, and mathematics. This is not only comprehensible, but to a certain extent justified, the more so as at present everyone can find opportunity, even outside of the school, to perfect himself in the mother tongue and in arithmetic.

These considerations indicate that our recently planned reorganization of technical night courses in conformity with the American system is calculated to be of benefit.

## CONCLUSION.

The Reiseberichte close with the report of Councilor Oppermann, as appendix. It contains general accounts of the journey to America, the character of American cities and of American scenery, American railroad management, American economic conditions with special reference to agriculture and the industries, the conditions of labor, the general character of the St. Louis Exposition, and the return to Germany. Aside from its general literary and scientific value it contains, however, nothing additional bearing on the interests with which this synopsis is concerned.

## CONTENTS OF THE "REISEBERICHTE."

## I. GENERAL.

## A. REPORT OF DOCTOR BUNKER, COUNCILOR OF INDUSTRY, BERLIN.

	Page.
American secondary schools in their relation to commerce and industry.....	7
1. The American common school system.....	7
2. The American high schools.....	10
3. Manual training in high schools.....	16
4. Commercial schools.....	23
5. General remarks concerning American education.....	36

## B. REPORT OF DOCTOR KUYPERS, CITY SCHOOL SUPERINTENDENT, DÜSSELDORF.

Elementary schools and the training of teachers	
1. Introductory remarks.....	44
2. Kindergartens.....	46
3. Elementary schools.....	47
(a) Historical review.....	47
(b) Organization.....	48
(c) Methods and aims.....	50
(d) Teachers and pupils.....	51
(e) Branches of study.....	54
4. Training of teachers.....	56
5. Critical estimate and conclusion.....	61

## C. REPORT OF H. BACK, DIRECTOR OF INDUSTRIAL SCHOOL, FRANKFORT ON THE MAIN.

Training of industrial workers:	
1. Introductory remarks.....	65
2. Industrial production by wholesale, special machines, and division of labor.....	67
3. Views concerning the want of skilled artisans.....	73
4. What is done by captains of industry to prepare well-trained laborers?.....	74
5. Some legal provisions of States concerning apprentices.....	77
6. Position of organized labor with reference to industrial education.....	79
7. Other agencies for the promotion of apprentice education.....	81
8. The social position of the American artisan.....	89
9. Concluding remarks.....	94

## II. INSTRUCTION IN INDUSTRIAL ART AND DRAWING.

## A. REPORT OF DR. ING. MUTHESIUS, COUNCILOR OF INDUSTRY, BERLIN.

	Page.
1. Industrial art at the World's Fair at St. Louis.....	99
(a) Industrial art outside of Germany.....	99
(b) German industrial art.....	111
2. The success of Germany at the World's Fair in St. Louis.....	128
3. The present condition of American industrial art.....	130
4. Instruction in art and technical instruction in America.....	131

## B. REPORT OF E. THORMÄLEN, DIRECTOR OF SCHOOL OF INDUSTRIAL ART AND OF TRADE SCHOOL, MAGDEBURG.

1. Industrial art at the World's Fair, St. Louis.....	144
2. Education in industrial art in the United States.....	151

## C. REPORT OF PROF. C. SCHICK, DIRECTOR OF TECHNICAL SCHOOL, CASSEL.

1. The school system of the United States.....	156
2. Drawing in American schools, tendencies.....	163
3. Manual training in American schools.....	165
4. Possibilities of utilizing American educational ideas.....	171
5. Various kinds of shopwork.....	177

## D. REPORT OF VON CZHAK, INDUSTRIAL SCHOOL COUNCILOR, BERLIN (FORMERLY OF DÜSSELDORF).

1. Introductory remarks.....	180
2. Common schools in the United States.....	185
3. Manual training.....	188
4. Drawing as a study.....	193
5. Technical instruction.....	198
6. Instruction in art.....	200
7. Instruction in architecture.....	204
8. Trade schools.....	207
9. American industrial art.....	212
10. Concluding remarks.....	214

## III. MACHINE CONSTRUCTION AND THE METAL INDUSTRY.

## A. REPORT OF PROFESSOR GÖTTE, COUNCILOR OF INDUSTRY, BERLIN.

Schools for the training of officials and artisans of the metal industry compared with similar institutions of Prussia:	
1. Origin of such institutions.....	217
2. Kinds of school.....	218
3. Course of study—	
(a) In technological schools.....	222
(b) In trade schools.....	227
(c) In evening schools.....	229
4. Buildings and equipment.....	230
5. Teachers.....	231
6. Supporters and authorities of these schools.....	233
7. Cost of such education.....	234
8. Concluding remarks.....	235
9. Appendix: (a) Massachusetts Institute of Technology, (b) Worcester Polytechnic Institute, (c) Stevens Institute of Technology, (d) School of Engineering of Columbia University, (e) Sibley College, (f) College of Engineering of the University of Illinois, (g) Technological Department of Drexel Institute, (h) Technical Department of Pratt Institute, (i) New York Trade School. The organization and course of study of each of these 9 institutions are given.....	236

## B. REPORT OF BECKERT, ROYAL INDUSTRIAL SCHOOL COUNCILOR, SCHLESWIG.

1. Organization of the American school system.....	286
2. Engineering schools of universities and colleges.....	288
3. Trade schools.....	292
4. Manual training schools.....	293

CONTENTS OF THE "REISEBERICHTE."

47

C. REPORT OF E. BELL, DIRECTOR OF THE HARDWARE AND CUTLERY SCHOOL,  
SCHMALKALDEN.

	Page
1. Introductory remarks.....	296
2. Tools and machine tools at the World's Fair, St. Louis.....	298
3. Observations in American workshops and tool industries.....	300
4. The American manner of production and means employed.....	304
5. The success of the American tool industry and its causes.....	321
6. Concluding remarks.....	325
7. Appendixes: 15 full quarto photogravures of American machine tools and hardware.....	327

IV. SHIPBUILDING.

REPORT OF REJLENTIN, DIRECTOR OF THE SCHOOL OF SHIPBUILDING AND MACHINE  
CONSTRUCTION, KIEL.

1. Introductory remarks.....	329
2. Technological instruction, with especial reference to shipbuilding schools.....	330
3. American methods of using shipbuilding materials, and their influence upon cost of building.....	338
4. Concluding remarks.....	344
5. Appendixes: Courses of study of the Manual Training School of Washington University (St. Louis), the Spring Garden Institute (Philadelphia), the Armour Institute of Technology (Chicago), and the evening courses in shipbuilding of the Franklin Institute (Philadelphia). Methods of technical drawing. Time allotment of the different subjects of instruction in the departments of machine construction in certain higher technological institutions, compared with that found in similar Prussian institutions. The Hampton Normal and Agricultural Institute.....	345

V. THE TEXTILE INDUSTRY.

REPORT OF PROFESSOR GERTLER, COUNCILOR OF INDUSTRY, BERLIN.

1. The textile industry at the World's Fair at St. Louis.....	368
2. Textile schools in North America.....	368
3. Visits to textile factories.....	372

VI. CERAMICS.

REPORT OF DOCTOR PUKALL, DIRECTOR OF THE ROYAL CERAMIC SCHOOL, HUNZLAU.

1. Ceramics and glass at the World's Fair at St. Louis, including the exhibits of all the leading nations.....	381
2. Visits to American ceramic factories.....	400
3. American ceramic schools.....	409

VII. APPENDIX.

REPORT OF WM. OPPERMANN, COUNCILOR OF INDUSTRY, ARNSBERG.

1. Introductory remarks.....	419
2. The voyage.....	420
3. New York and other large American cities.....	423
4. North American landscape scenery.....	427
5. The railroads.....	429
6. American economical life, especially agriculture and industry.....	437
7. Visit to American industrial centers.....	449
8. Protection to laborers and industrial supervision in the United States.....	460
9. The World's Fair at St. Louis.....	469
10. Departure and retrospect.....	476

## INDEX.

Aachen, Germany, technical college, 36.  
Academies of art schools for illustrators, 31.  
Accuracy neglected in drawing, 28.  
Act, Morrill, of 1862, 35.  
Admission, requirements of, to engineering schools, 38.  
Aim of American kindergarten, 17; of school, to stimulate, show the way, 14.  
Ails-Chalmers Company, 42.  
Alley, blind, American school is not in.  
America, a slumbering giant as yet, 4; discusses educational problems, 11; gives an example to the world, 34; has boards of education and a bureau of education, 19; has opened new paths in industrial art, 30; lacks an artistic past, 32; lacks European point of view, 27; opened new paths in teaching drawing, 34; is the land of contrasts, 26; scarcely discovered when Luther demanded compulsory education, 16.  
American educational system impressed by German suggestions, 22.  
American people, character of, 41; permeated with technical spirit, 31; sober-minded, healthy and vigorous, 41; sound at heart, 41.  
Americans, energetic, resourceful and superficial, 12; energetically at work to advance, 23; love their country, 41; want a modern school, 14.  
Amos Tuck School of Dartmouth College, 22.  
Arnour Institute, Chicago, 32.  
Art instruction, develops rapidly, 25, 34; the human figure in, 27.  
Art schools, after the European model, 29; lack teachers of high standing, 29; prepare drawing teachers, 29; typical ones, 29.  
Art students, majority are women, 29.  
Association, innocent, promoted by coeducation, 23; National Teachers', 9.  
Attitude, American, toward other nations, 12; of trade unions toward industrial education, 42; which honors labor, 21.

### B.

Back, Director H., 41, 44.  
Baldwin Locomotive Works, 42.  
Baron de Hirsch Trade School, 43.  
Beckert, Councilor, 38.  
Bell, Director E., 40.  
Belief, naive, in superiority of American institutions, 12; religious, of pupils not inquired into, 10.  
Boys, clever, turned into cheap clerks, 22; should be educated by men, 14; working at the lathe, had been listening to Cicero, 21.  
Brown, Elmer Ellsworth, Commissioner of Education, 5.  
Buildings of normal schools of noble style, 24.  
Bureau of Education, origin, 9; its publications, 15; a characteristic feature of the United States, 10.

### C.

Character, corporate, of Harvard, Yale, and Columbia, 10; fundamental Anglo-Saxon, 10; general, of technical schools, 35; national, of American schools, 10; of American people, 41; of drawings made in technical colleges, 36; of high school, a double one, 19; of instruction in engineering schools, 38.  
Characteristics, of the nation exemplified in school, 16; of normal schools, 24; of trade schools, 44.  
Chemistry, strong emphasis on, 36; too much time allotted, 36.  
Class instruction contrasted with individual instruction, 23.  
Class rooms, laterally lighted, in art schools, 32.  
Coeducation, a democratic measure, 23; has tendency to elevate both sexes, 14; in American schools, 14; opinion of Dr. Dunker, 23; should cease at the age of 12, 14.  
Collections of musical instruments and other appliances, 32.  
Colleges, modified their courses, 19; normal, giving degrees, 25; of commerce, 22; technical, in America, 35.

Combination of text-book and oral methods, 23.  
 Commission, the Mosely, 5; the Royal Prussian, 5.  
 Commissioners, their impression given baldly, 8.  
 Commonwealth, not only right but duty to provide for education, 10.  
 Community of interests between sexes, 23.  
 Comparison between American and German technical schools, 35.  
 Composition, knowledge of the laws of, 28; of landscapes in drawing, 29.  
 Condition, economic and political, of a country, 7; of industrial art in America, 30.  
 Connection, between school and art collections, 32; organic, of kindergarten and school, 15.  
 Contrasts, America, the land of, 26; between Prussian and American technical colleges, 36; with European ideas in school drawing, 27.  
 Corporations, industrial, methods of training by, 42.  
 Country and school, both in transitional state, 16.  
 Course of study, of elementary schools, 17; of high schools, 19; of normal schools, 24; of technical colleges in Prussia superior, 37.  
 Courses, commercial, in high schools, 22; finishing, in schools, 14; for master workmen, 44; for special teachers, 25; in colleges, modified, 19; motley in high schools, 19; of technical colleges, 36; of unprecedented complexity in high schools, 19; post-graduate, in normal schools, 25.  
 Criticism, of American industrial education, 33; of the American schools, 16.  
 Critics, expert, of the American schools, 11; of America, heard, 7.  
 Cultivation of taste, chief object of drawing, 27, 34.  
 Culture, artistic, considered very important, 35; general, offered in institutions, 10; school system is part of it, 7.  
 Czihak, Councillor von, 16, 26, 44.

## D.

Danger, of losing oneself in details, 28; of party politics to the schools, 15.  
 Dealing with material things gives knowledge of nature, 21.  
 Decoration, in drawing, neglected in America, 35; inner, of schools in America, 32.  
 Defects, of the American schools, 15; transitional, 18; of technical colleges, not much felt, 40.  
 Degrees of B. A. and M. A. given by normal colleges, 25.  
 Demand, for shipbuilders, will be met soon, 40; for trained engineers, 36.  
 Designing in art instruction, 27; construction neglected, 36.  
 Desire for progress the best school can give, 21; of teachers, to retain pupils in school, 22; to increase college attendance, 22.  
 Development, extraordinary, of industry, 36; historic, of our schools, 9; industrial, in America, 9; of kindergarten in America, 15; of taste in drawing, 26; political, of the nineteenth century, 9; prodigious, of trade, 9.  
 Difference, between German and American schools, 10; between Prussian and American technical colleges, 36; between Prussian lower and higher technical colleges strictly observed, 37; between shop instruction and that in trade schools, 43; local, between educational institutions, 10.  
 Dilletantism (Lalenhaftigkeit) in America, 11.  
 Discussions in America are on educational problems, 11; in Germany on organization and methods, 11.  
 Distinction of American manual-training schools, 20.  
 Dow, Arthur, 28.  
 Drawing, accurate, of simple and complex objects, 27; ambidextrous, Tadd's advocacy, 28; from copy, not found, 18; from nature, found in schools, 27; from nature, Tadd's idea, 28; in American schools, 19; in America, rests upon study of child nature, 34; in common schools, 33; in high schools, 27; in school, begins at the bottom, 34; in technical colleges, 36; in technical schools, criticized, 30; instruction a kind of play, 29; instruction has distinctly American ideas, 27; instruction in elementary schools, 25; of solids and ornaments, 34.  
 Drawing and lectures in technical colleges too independent, 36.  
 Draxel Institute, Philadelphia, 22, 31, 38.  
 Dunker, Doctor, 9, 19, 22.

## E.

Education, American, differently judged, 7; artistic, of the people, 34; commonwealth's duty as well as right, 10; compulsory, not universal, 15; general, with reference to industrial development, 8; industrial, attitude of trade unions, 42; not a finished one aimed at, 15; of hand and eye, 13, 15, 34; of the whole boy, 20; pedagogic, climax found in teachers' colleges, 25; special, for professional men, 10; national, task of, 21.  
 Emphasis, upon experiment compensates for lack of theory, 38; upon mechanical work excessive, 36.  
 Energy of Americans extraordinary, 33.  
 Engineers, mechanical, can not derive benefit from chemical analysis, 36; scientifically trained, needed, 36.

Equipment, mental, for scientific progress, 38; of industrial art schools, 32; of kindergartens, 17; of laboratories, 21; of laboratories in American schools, 11; of normal schools, 24; of technical colleges, praiseworthy, 39; of workshops, 18.  
 Evening Trade School of Boston, 43; similar schools discuss, 44.  
 Export, American technical, more practical than German, 40.  
 Exposition at St. Louis, department of education, 7.  
 Expression, graphic and written, 22; of childish thought, 13.  
 Extension, of school age to 15, 14; rapid, of high school system, 19.

## F.

Feeling of being occupied with the present, 17; painful, not to see German boys do so, 21.  
 Freedom in drawing curbed by shopwork, 34; of motion in America, 12.  
 Froebel's principles not limited to kindergarten, 17.  
 Froelich, Hugo, 29.

## G.

Geography, considers practical relations, 17; its commercial treatment, 22.  
 German and American schools, differences, 10.  
 German schools neglect educational principles, 11.  
 Germany, American students disciples of, 12; has misusers of instruction, not of education, 10; not even the size of Texas, 41; rich in art collections, 32; what it needs to enhance its achievements, 43.  
 Germs, a thousand, await future development, 34.  
 Götte, Professor, 35, 44.  
 Government, Federal, not burdened with the care for schools, 9.  
 Grades of schools interlocked in America, 16.  
 Growth of cities hinders healthy progress of school system, 16.  
 Gürtler, Professor, 41.

## H.

Hallmann, Dr. W. N., 1, 5.  
 Harris, Dr. William T., 9.  
 Harvard, Yale, and Columbia, their corporate character, 10.  
 Harrick, Chestnut A., 22.  
 High schools, commercial, 22; instruction in art, 27; their relation to commerce and industry, 19.  
 Horace Mann, 24.  
 Horace Mann School, 18.  
 Huxley quoted in America, 10.

## I.

Ideal, American educational, 11; American, in machine work, 30; German educational, 11.  
 Ideas, leading, in teaching drawing, 26; foreign educational, 16; of organization, to be limited, 8.  
 Impression, general, of technical colleges, 40; pathetic, to see a male student in a normal school, 24.  
 Impressions, color, of greater importance than of outline, 26; of German specialists, 7.  
 Inclinations of the child the criterion of the teacher, 14.  
 Individuality, its development, 18.  
 Industrial art, American exhibit not complete at St. Louis, 30; America has opened new paths, 30.  
 Industrial art schools in America, 30; the American, not developed as yet, 33; insist upon proportion of line and surface, 28; multiplicity of subjects, 31.  
 Industrial education, attitude of trade unions, 42.  
 Industrial instruction of Germans superior, 32; prospect of, 33; rapidly developed in America, 34.  
 Influence, determinative, of Morrill Act, 35; of America upon European industrial art, 30; of American kindergarten, 17; of English industrial art small, 30; of German not precluded, 30; of Froebel in America, 17; of German ideas, 22; of machinery upon character of industry, 41; of N. E. A., far-reaching, 9; of the Bureau of Education, 9; of women on boys not inferior, 14.  
 Ingenuity of American furniture manufacturers, 30.  
 Institutes, mechanics', devoted to industrial training, 42; teachers', 25.  
 Institutions, American, admirers of, 7; secondary, coeducation in, 23.  
 Instruction, commercial, in America, 22; German industrial, 7; gratuitous, 15; in drawing and art, 26; has serious defects, 28; in elementary schools, 17; in engineering schools, character of, 38; in industrial art, character, 31; in the mother tongue, 30; is a stimulating exchange of views, 14; religious, in public schools, 10.  
 Interests, educational, not assigned to Federal Government, 9; literary, pupils not drawn by, 31.  
 Interference on part of school board with inner management, 15.

## J.

Judgments, differing on American education, 7; snap, wrong, 13.

## K.

Kindergarten, the American, 17; a large nursery, 17; a public school, 10.  
Kindergartens, public, charity, and church, 17; their equipment, 17.  
Kuypers, Doctor F., 12, 17.

## L.

Laboratory, in American schools, 21; for machine construction, exercises in, 36; mechanical, in technical schools, 36; physical, exercises in, 36; practise, in technical colleges, 39.  
Lack, of ornamentation, 36; of schools for special branches of industrial art in America, 36; of teachers in art schools, 32; of teachers of high standing in art schools, 29; of trained teachers in America, 24.  
Ladder, educational, reaching from the gutter to the university, 10.  
Landscape, drawing, in American schools, 18; painting, almost wholly absent, 29.  
Latin, in high schools, 19; in St. Louis Exposition, 20.  
Law in Massachusetts makes manual training obligatory, 20.  
Learning by doing, 20; a principle of Fröbel, 16.  
Library, use of, taught, 14; public, and newspapers, 14.  
Life work in art schools in no way pedantic, 33.  
Luther demanded compulsory education, 16.

## M.

Machine construction, standardizing in, 36; too much specialized, 37.  
Machine work, character of American, 30; must become artistic, 30.  
Machines, their manipulation demands keen observation, 21.  
Manual training, a method, 13; in American schools, 18; in America begins where it ends in Germany, 20; in high schools, 20; its influence can not be overestimated, 43; obligatory, 18; the highest form of self-activity, 18.  
Manual training high schools, 18; are not trade schools, 20.  
Massachusetts Institute of Technology, 11, 38.  
Massachusetts mother of American normal schools, 24.  
Master artisans giving instruction, 21.  
Masterpieces of English and French art in school collections, 32.  
Matter of instruction in technical schools, its treatment, 36.  
Mechanics' Institute, at Cincinnati and Rochester, 42.  
Mechanics' Institutes, devoted to industrial training, 42.  
Median lines in mechanical drawing lacking, 39.  
Method, a kind of doing, 13; desultory, of piano lessons, 28; difference in, in Germany and America, 30; in drawing, does not go deep enough, 26; in drawing too recently introduced, 26; of American kindergarten, 17.  
Method of instruction, American, different from German technological schools, 40; current in Germany, 36; in engineering schools, 38.  
Methods, antiquated, in drawing in technical schools, 39; former, of apprenticeship, 41; of training by corporations, 42; of work, worthy of imitation, 39.  
Metropolitan Museum, New York, 32.  
Microscope rarely found in school in Germany, 22; used in botany, 21.  
Models, geometrical, for free-hand drawing, 27.  
Modern spirit pervading European art industrial schools, 33.  
Muthesius, Doctor, 25, 30.

## N.

Nature study, deals with matters of practical life, 18; in form of drawing of plants, 33.  
Need, for technical schools of lower rank, 36; urgent, to teach practical application, 43.  
Needs, local, American school responds to, 9; of Germany to enhance its industry, 43.  
New York High School of Commerce, 22.  
New York Trade School, 41.  
New York University, 22.  
Night school for technical drawing for apprentices, 42.  
Normal schools, admission of high school graduates, 15; almost always have a kindergarten department, 24; attendance too large for shore work, 24; buildings and equipment, 24; their teachers well prepared, 25; used for general culture, 24.

## O.

Object, chief, of manual training is mental development, 31.  
Obligatory subjects in high schools, 19.  
Observations, expert, of American institutions, 5.

Oppermann, Councilor, 45.  
 Opportunity, for work for young people, 43; offered in normal schools, 25; to see ourselves as others see us, 8.  
 Organization, of Prussian technical colleges, 37; of schools in America, 13; of technical schools, 35; present, of high schools, 19.  
 Ornament, historic, used as models, 35; may be questionable, 35; use of, in drawing, 34.

## P.

Painting, decorative, neglected in America, 35.  
 Parliament, Prussian, House of Deputies, 5, 7.  
 Pestalozzi, Fröbel, Herbart, and Wundt may claim share in progress, 12.  
 Philadelphia Trade School, 43.  
 Positions, higher, in factory and office, 36; lower, trained men not required for, 36.  
 Possibility, far-reaching, of school organization, 15.  
 Practicability of Dow's ideas doubted, 28.  
 Practises of Rubens and Lenbach, 35.  
 Prang's series of text-books for drawing, 26.  
 Pratt Institute, Brooklyn, 31, 38.  
 Preparation, for life or for college, 19; of teachers, inadequate, 15.  
 Prevalence of the fair sex in art school not profitable, 32.  
 Pride, American, does not rest on hatred but on pity, 12; in schools in America, 11.  
 Principles, fundamental, in school drawing, 27; of American drawing instruction are excellent, 28.  
 Privacy of occupants of dormitories, 24.  
 Private schools in cultured sections of the country, 10.  
 Problem, of adapting the school system to city's growth, 16; of promoting capable pupils, 23.  
 Problems, social, attention given to, at Amos Tuck School, 22.  
 Productive doing is scarcely ever reached, 37.  
 Programs of American school surprising, 16; of culture, stages of, 18; of humanity illustrated in drawing, 18.  
 Progressiveness of the American school, 15.  
 Prospective view of American industrial instruction, 33.  
 Psychology, favorite study of American teachers, 25.  
 Public schools in America appreciated, 16; their organization, 10.  
 Publications of the Bureau of Education, 9, 15.  
 Punishment, corporal, banished, 11.  
 Pupil is kept busy in the trade school, 43; may excel his teachers, 12; regard for his personality, 13; talented, has much leisure, 23.  
 Pupils, indolent and weak, sought other courses, 22; mentally deficient, 21; of less talent for abstract studies, 15; small number in a class, 15; the school fails to reach, 21; without creative ardor, 21.  
 Pursuits, industrial and professional, 13; industrial, preparation for, 15.

## R.

Reading, connected, in American school, 14.  
 Record books models of excellence in laboratories, 30.  
 Reduction of forms to utmost simplicity, 35.  
 Reformatories or industrial schools, 43.  
 Regulations issued by the workmen, 42.  
 Representation of objects of nature in drawing, 34.  
 Requirement, for admission to engineering schools, 38; of high school training for normal students, 15.  
 Requirements receiving little consideration in technical schools, 37.  
 Responsibility, teacher's, for work of student, 38.  
 Restaurants or lunch rooms in schools, 32.  
 Results, demonstrable, unsatisfactory, 13; finished cultural, found rarely, 34; in drawing, trifling, 26; in higher grades, inferior, 28; of observations in America applied to Germany, 43; small, of drawing in technical colleges, 36.  
 Reverence, due to fidelity and zeal of women as teachers, 32.  
 Ross, Denman, 29.  
 Rudiments of technical drawing taught to apprentices, 42.

## S.

Salary, of kindergartners, 17; of teachers too low, 15.  
 Schick, Professor, 25, 31, 34.  
 School, an essential factor of the development of the State, 16; bears upon actual life, 14; open to all alike, 14; permeated by kindergarten method, 13; should be a monarchy, 15; the American, carries too many subjects, 18; responds to local needs, 9; thoroly in earnest, 16; youth of, 16; too many women in, 15.

- School system, an organic whole, 16; part of a country's culture, 7.  
 School training not provided for subordinate workers, 36.  
 School workshop, entirely lacking in Prussia, 37; imitation of Russia and France, 37.  
 School of Engineering, Columbia University, 38.  
 Schools, American, are not blind alleys, 10; for bookbinders, 33; for special trades, 44; German and American differences, 10; in Massachusetts and Arizona, display qualitative differences, 10; laboratories in, 11; maintained by churches, 10; pride in, in America, 11; public, their organization in America, 10, 13.  
 Science and art, must not linger in ideals, 41.  
 Sciences, academic, and pedagogy touch, 15; auxiliary and a little skill are no longer sufficient in the competition, 43.  
 Scientific pondering left to future generations, 40.  
 Sellentin, Director, 39.  
 Shopwork, bears on all-sided development, 35; inculcates a sense of truth, 21; in industrial schools, 35; practical, a palliative for freedom in drawing, 34.  
 Sibley College, 38.  
 Skill in drawing to be developed, 26; of hand and eye, 40.  
 Snow, Bonnie E., 29.  
 Special schools for work in metals, pottery, forging, 33.  
 Spirit, of American drawing instruction is excellent, 28; of enterprise in America, 14; of the young, is inventive, 12; of unity, in home and school, 15; technological, pervading Germany, 33.  
 State governments appreciate normal training, 24.  
 State institutions of a reformatory character, 43.  
 Stevens Institute of Technology, 38.  
 Struggle, between Germany, England, and America, 23; between scholastics and humanists, 16.  
 Students trained to inquire into the why and wherefore, 42.  
 Subjects, economic, judicial, and social, treated at Amos Tuck school, 22; in high schools, obligatory and optional, 19; taught in evening trade schools, 44; taught in technical colleges that should be in preparatory institutions, 36; too many in industrial art schools, 31.  
 Success, of school, lies in advance over former conditions, 13; on basis of merit, 8.  
 Suggestions, German, their application, 22; prolific, for Europeans in American schools, 33.  
 Supervision, of drawing instruction, 27; excellently organized, 28.  
 Supervisors trained in normal schools, 25.  
 System, of education, American, differs completely from German, 31; of public education, truly named, 10; of public instruction, manual training part of, 43.

## T.

- Tadd, J. Liberty, 28.  
 Taste, artistic, cultivation of, 21; in choice of color in woman's dress, 30; in normal school architecture, 24.  
 Teacher is feminine gender in America, 11.  
 Teachers, few have normal training, 24; inadequately prepared, 15; low social position of, 15; of art schools deficient, 32; of normal schools well prepared, 25; prepared in colleges, 15; pursuing cultural studies, 15; their salary too low, 15; too many women, 15.  
 Teachers' Association, National, 9.  
 Technical colleges, in America, 35; having workshops, 39.  
 Technical schools, claim collegiate rank, 36; do not supply demand for trained engineers, 36; German, for special branches, 35; in universities, 15.  
 Tendency, to apply art appreciation, 27; to make little knowledge go a great way, 11; to specialize and standardize, 36; universal in America, toward utility, 31.  
 Text-books, free, 15; have a peculiar place in American schools, 23; use of, in technical schools, 38.  
 Thormölen, Director, 25.  
 Trade instruction, in Germany inadequate, 43; quite defective, 44.  
 Trade schools, discussion of, 43; evening, 44; explain operations, 43; not manual training schools, 20.  
 Trade unions, attitude of, toward industrial education, 42.  
 Training, scientific, inferior in America, 40; for citizenship, 14; in school workshop preferable to unpaid learners in factories, 37; manual, a method, 14.  
 Transformation, complete, of the entire school organization, 35.  
 Treatment, commercial, of geography, 22; of designing, insufficient, 36; of drawing, uniformity in, 26; of pupils' work, 11; of the matter of instruction in technical schools, 36.  
 Trip thru harbor of Hamburg quiete doubts, 41.

## U.

- Universities, American, not definitely organized when Morrill act passed, 26; technical schools in, 15; German, departments of, 36.

University, a public school, 10; of California, 22; of Chicago, 22; of Illinois, 22; of Michigan, 22; of Wisconsin, 22.  
Urbana College of Engineering, 38.  
Use of the library in America, 14.

## V.

Value, educational, of manual training, 20; of practical experience, 36; of shop work for physical development, 20; for ethical education, 20; of text-books, 23.  
Victory, an easy, over Spain, 9; lies on the side of men of wide outlook, 23.  
Visits to American schools to gather correct information, 13.  
Volksschule of Germany, course of study, 17.

## W.

Water-color work without pencil drawing, 27.  
Wharton School of the University of Pennsylvania, 22.  
Williamson Free School of Mechanical Trades, 43.  
Woman's dress, American, praise for, 30; American, the effect of personal taste, 30; Parisian, determined by fashion, 30.  
Women, American, as pupils and as teachers of art, 31; German, only students, not teachers of art, 31; in kindergarten, superior, 15; their excessive employment as teachers, 15.  
Woodward, Prof. C. M., 20.  
Worcester Polytechnic Institute, 38.  
Work, constructive, in school, 18; defective, considered artistic, 34; muscular and mental, mingled, 21; of American technical schools, 35.  
Workshops, connected with technical colleges, 39; in technical colleges, 30; seem interlopers in ceramic schools, 33; their equipment, 18.

## Y.

Yearning for higher things created in the pupil, 21.  
Young men from technical colleges easily find employment, 40.

## O