1885.

NEW ZEALAND.

EDUCATION:

TECHNICAL EDUCATION

(CORRESPONDENCE RELATING TO).

Presented to both Houses of the General Assembly by Command of His Excellency.

No. 1.

The PRESIDENT, Christchurch Industrial Association, to the Hon. the MINISTER of EDUCATION.

SIR,— Industrial Association, Christchurch, 24th June, 1881.

I have the honour to inform you that this association has had its attention directed to the desirability of some provision being made for technical education, particularly in its application to those engaged in learning trades, &c. A sub-committee was recently appointed to take the matter into consideration, and I have now the honour to hand you a copy of their report. They recommend the establishment of a Science and Art Department for the colony, on the basis of the system pursued in England, and that the proposed classes should be in connection with the existing Government schools, where all the machinery required for the proper supervision of examinations already exists.

The Committee venture to bring this matter under your notice, believing that it is of great importance that technical education should be developed and encouraged in every possible way, and that the scheme suggested will not involve any great expense.

Trusting that the subject may receive your favourable consideration,

I have, &c.,

ROBERT ALLAN,

The Hon. the Minister of Education, Wellington. President.

Enclosure in No. 1.

REPORT of COMMITTEE of CHRISTCHURCH INDUSTRIAL ASSOCIATION.

THE Committee appointed to consider a Science and Art scheme for this colony, have the honour to report as follows:—

1. The formation of a Government Science and Art scheme in New Zealand is eminently desirable.

2. Such scheme should be in close connection with existing Government schools, and should make provision for evening classes of both sexes.

3. The science subjects to be taught should be: (*a*) Theoretical and practical mechanics, (*b*) physics, (*c*) chemistry, (*d*) biology, and (*e*) geology.

4. After the establishment of the scheme, and so soon as circumstances would warrant, there should be an expansion of each subject.

5. Existing school-buildings should be utilised.

6. The several Education Boards and School District Committees should undertake local management.

7. Fees should be required from all pupils attending any class or classes.

8. Pecuniary aid should be given by the Government, upon the basis of results.

9. State medals and other awards should be given on examination.

10. Teachers should be chosen (1) from amongst Government teachers or other persons, subject in all cases to examination in the special subject or subjects to be undertaken; (2) from professorial staffs; (3) from specialists.

11. Examination papers should be set (1) by Professors, or (2) by specialists.

12. Examinations should be conducted under the immediate supervision of members of Education Boards or of School Committees.

In connection with the Art Department, the following recommendations are made:—

1. Schools of art, where in existence, should be placed in connection with the State science and art scheme.

2. Subjects or divisions should include practical geometry, linear perspective, free-hand drawing, model drawing, principles of design, drawing for carpenters, drawing for builders, drawing for machinists, &c.

3. Grade certificates, medals, &c., should be granted.

No. 2.

The SECRETARY for EDUCATION to the PRESIDENT, Christchurch Industrial Association.

SIR,— Education Department, Wellington, 4th July, 1881.

I have the honour, by direction of the Minister of Education, to acknowledge the receipt of your letter of 24th ultimo, enclosing a report of a sub-committee of the Industrial Association on the subject of technical education.

I am to say that your letter and the report will receive consideration.

I have, &c.,

The President, Industrial Association, Christchurch. JOHN HISLOP.

No. 3.

MEMORANDUM by the INSPECTOR-GENERAL of SCHOOLS.

Science and Art Department.

Hon. Mr. Dick.

WHEN I visited Christchurch last month, I called on the Secretary of the Industrial Association and asked him to put me in communication with some member of the association who could give me full information as to the views of the committee with regard to the establishment of a Science and Art Department. He referred me to Professor Bickerton, as the member of committee best informed on the subject. The following is a summary of the scheme which Professor Bickerton has in his mind:—

The Education Department to undertake the duties of a Science and Art Department on the English model.

School Committees to act the part of "local committees."

Science and Art classes, under the auspices of the Education Department and under the supervision of the local committees, to be held in the public school-rooms in the evening. This would necessitate provision being made for lighting the rooms.

The classes to be taught by persons who have passed the examinations to be instituted, or an equivalent examination.

Annual examinations to be held simultaneously, the papers being set by examiners appointed by the Government, and to be read by them and assistant examiners.

A syllabus of study and examination to be prepared, embracing at first the following five subjects, each in two stages: Biology, geology, physics, chemistry, and mechanics.

The examiners to receive a fee of, say, £2. 2s. for each paper set, and, say, 1s. for each set of answers read.

The results of examination to be shown by publishing the list of successful candidates in three classes for each subject.

The teacher of a science class to receive from the Government a fee for each successful candidate from his class as follows: For the upper grade in each subject, £3 for a first-class pass; £2 for a second-class pass; *nil* for a third-class pass: for the lower grade in each subject, £2 for a first-class pass; £1 for a second-class pass; *nil* for a third-class pass: such payment not to be made on account of any candidate who has not attended the class at least twenty times, nor on account of any child attending a public school.

The teachers to receive from the students small fees, to be fixed by the teachers.

The Inspectors of Schools to visit as many of the examination-rooms as possible while the examinations are in progress; and honorary Inspectors to be appointed.

The subjects in art to be as defined in the letter from the President of the association, and the arrangements to be as nearly as possible the same as for science.

Professor Bickerton thinks, as I do, that the proposal to place existing schools of art under a Science and Art Department is not a feasible one, considering how these schools have originated and are now maintained.

I have no doubt that a scheme on these lines would confer great benefit on the community. I think its early growth would be very gradual, and that therefore the cost for the first few years would not be considerable.

Education Department, Wellington, 27th December, 1881. WM. JAMES HABENS.

No. 4.

MEMORANDUM by the INSPECTOR-GENERAL of SCHOOLS.

Technical Education.

The Hon. the Minister of Education.

THE second report of the Royal Commissioners on this subject is now in my hands. It is dated the 4th April, 1884. In comparing the opportunities of obtaining technical education in England with those provided on the Continent, they say (page 514) that English workshops "are really the best technical schools in the world" for training proprietors and managers; and (page 515) that England has in the Science and Art Department classes "a system of instruction for the great body of our

foremen and workmen, susceptible, certainly, of improvement, but which in its main outlines it is not desirable to disturb." The improvements suggested are not of a radical kind; the most important being (1) a more practical character to be given to examinations in some subjects; (2) more attention to grouping of subjects; (3) higher grants in the advanced stages; and (4) more efficient inspection.

You will remember that in December, 1881, a scheme was submitted for instituting classes on the model of those of the Science and Art Department. The scheme was under your consideration again in April, 1883.

The recommendations (copy herewith) as to public elementary schools will be found at pages 536, 537.

Recommendation (*a*) might be gradually adopted here. We have a regulation for drawing which prescribes the work for each standard. At first we might require Standard I. drawing to be incorporated with Standard I. writing. Next year the new method might be extended to Standard II., and so on year by year, until in six years writing and drawing were included as one subject in the work of every standard. This plan would give unskilled teachers time to learn the subject.

(*b.*) It is proposed that in the first three or four standards the class-subjects, Elementary Science taught by object-lessons, and Geography, shall be put together as one subject. The effect of this would be that a school presenting for the first three or four standards in class-subjects would have to present English and elementary science, including geography, instead of choosing between English and science on the one hand and English and geography on the other. I do not quite see how geography is to be "taught by object-lessons." Our schools are not expected to begin grammar before the Second Standard is passed, nor geography till the First is passed, but, once entered upon, these subjects are not voluntary subjects. As to elementary science taught by object-lessons, our syllabus makes it a class-subject, but does not designate it science whilst it is limited to the understanding of First, Second, and Third Standard children. A class-subject in England is a subject not necessary to passing standards, and rewarded by a special grant. A class-subject with us is not separately paid for, and is not necessary for pass, and therefore too many teachers ignore as much as they please of that part of the syllabus that refers to class-subjects. I fear that Inspectors do not always use their efforts to get the class-subjects taught.

(*c.*) Certainly all schools ought to be provided with casts and models for drawing, but, as they would have to be provided by Government, the method recommended by Commissioners of withholding grants from schools not so furnished is not applicable here.

(*d.*) The only way, probably, to get such a "specific subject" as proficiency in the use of tools attended to at school is to pay for results as the Commissioners propose. Payment by results is no part of our scheme, but it might be useful in this respect. A special vote would be necessary.

(*e.*) This recommendation is a very sound one. If teachers could be made to feel that all schools but the very smallest are required to study elementary science, and would become fit to teach the subject, then it would be easy to insist on having the science-lessons in rural districts arranged so as to bear upon agriculture.

(*f.*) Perhaps it is enough to require, as we do, that children under thirteen must attend school until they have passed the Fourth Standard. But the "compulsory clauses" need revision to make them effective.

It appears that what we want is (1) more direct control over inspection of schools, in order to secure proper respect for and observance of our standard regulations; (2) the means of supplying simple apparatus; and (3) a scheme on the model of the Science and Art Department classes, which would require a Parliamentary vote, small at first, and not likely to become large at any time.

On science in normal schools I will write a separate memorandum.

Education Department, Wellington, 22nd July, 1884. WM. JAMES HABENS.

Enclosure in No. 4.

EXTRACT from the Second Report of the Royal Commissioners on Technical Instruction, 1884. Vol. I., page 536.

I. As to public elementary schools:—

(*a.*) That rudimentary drawing be incorporated with writing as a single elementary subject, and that instruction in elementary drawing be continued throughout the standards. That the Inspectors of the Education Department, Whitehall, be responsible for the instruction in drawing. That drawing from casts and models be required as part of the work, and that modelling be encouraged by grant.

(*b.*) That there be only two class-subjects, instead of three, in the lower division of elementary schools, and that the object-lessons for teaching elementary science shall include the subject of geography.

(*c.*) That, after reasonable notice, a school shall not be deemed to be provided with proper "apparatus of elementary instruction," under Article 115 of the Code, unless it have a proper supply of casts and models for drawing.

(*d.*) That proficiency in the use of tools for working in wood and iron be paid for as a "specific subject," arrangements being made for the work being done, so far as practicable, out of school-hours. That special grants be made to schools in aid of collections of natural objects, casts, drawings, &c., suitable for school museums.

(*e.*) That in rural schools instruction in the principles and facts of agriculture, after suitable introductory object-lessons, shall be made obligatory in the upper standards.

(*f.*) That the provision at present confined to Scotland, which prescribes that children under the age of fourteen shall not be allowed to work as full timers in factories and workshops unless they have passed in the Fifth Standard, be extended to England and Wales.

No. 5.

The SECRETARY, Canterbury Industrial Association, to the Hon. the MINISTER for PUBLIC WORKS.

SIR,— Industrial Association of Canterbury, Christchurch, 18th October, 1884.

I have the honour, by direction of the above association, to hand you the following resolution, agreed to at its meeting last evening:—

Resolved, "That the Government be written to, asking them to what extent they will be prepared to endow a scheme of technical education for the Provincial District of Canterbury."

I have, &c.,
W. JAMESON,
Secretary.

The Hon. the Minister for Public Works.

No. 6.

The SECRETARY for EDUCATION to the SECRETARY, Canterbury Industrial Association.

SIR,— Education Department, Wellington, 22nd October 1884.

I have the honour, by direction of the Minister of Education, to acknowledge the receipt of your letter of the 10th instant, addressed to the Hon. the Minister for Public Works, and by him referred to the Minister of Education.

I am to say, in reply, that in the opinion of the Government the question of providing a scheme of technical education for the Provincial District of Canterbury is one that the Canterbury College Board should deal with; that the College has been largely endowed for the purpose; and that the Board, with its staff and its technical science museum and other appliances, should be able without Government assistance to undertake what is recognised by the Government as a most necessary and most important work.

I have, &c.,
JOHN HISLOP.

The Secretary, Industrial Association, Christchurch.

No. 7.

(Circular.)

The SECRETARY for EDUCATION to MANAGERS of SCHOOLS for HIGHER EDUCATION.

SIR,— Education Department, Wellington, 19th January, 1885.

I have the honour, by direction of the Minister of Education, to invite your attention to the great importance of including in the programme of the secondary schools as much instruction as possible in subjects that have a direct bearing upon the technical arts of modern life. Endowments and other public aid have been bestowed on grammar and high schools to enable them to supply to all classes, and not to the professional classes only, a course of study preparatory to the more direct and immediate training for special careers. The secondary schools should therefore be prepared to supplement the primary schools, and to carry on pupils trained in them to higher studies. The State also expects the managers of the secondary schools to bear in mind that the professions are likely to become overcrowded unless something is done to create a bias towards industries, and that our manufacturing industries will not be followed by our brighter and more intelligent youths if they are merely drilled in the ordinary subjects of a grammar-school education.

In other countries increasing attention is now being paid to geometrical and mechanical drawing and the handling of tools, as useful subjects of school instruction. The schools of this colony might do good service by taking up these subjects as well as physics and chemistry.

Good work might also be done by holding for a few months in each year evening classes, in which apprentices and others might have an opportunity of getting sound instruction in drawing and other subjects connected with their businesses or trades. In some towns voluntary effort has to a certain extent supplied what is wanted in the way of evening classes, but the schools could in some instances afford scientific instruction more thoroughly. It should be remembered that some schools hold their endowments under trusts requiring them to keep up evening classes.

If the secondary schools have become in any respect unpopular in any parts of the colony, it may be because the people have not seen direct practical results flow from them. Were attention paid to technical education as well as to ordinary studies in secondary schools, the objections now urged against the endowing of high and grammar schools would probably not be heard. The Minister hopes you will be able, as far as the revenue of your school permits, to give this subject your early attention and support.

I have, &c.,
JOHN HISLOP.

The Chairman of the Board of Governors, ——.

No. 8.

The SECRETARY, Napier High School Board, to the SECRETARY for EDUCATION.

SIR,— Napier, 7th February, 1885.

* * * * * * * *

I may add now, in answer to your circular of January, that our Board has agreed to give Mr. Heath a workshop, with forge, lathe, and carpenter's bench, for the use of the boys. He had repeatedly asked this from the date of his appointment. Mr. Heath also looks favourably on evening classes for drawing, &c., on two nights a week, but the Board think he has enough on his hands for the present, and are to revert to the matter at the beginning of next term.

I have, &c.,
DAVID SIDEY.

The Secretary for Education, Wellington.

No. 9.

The SECRETARY, Nelson College, to the SECRETARY for EDUCATION.

SIR,— College Office, Nelson, 7th February, 1885.

I have laid your letter of the 19th of last month, on the subject of technical education, before the Governors of Nelson College, and I am directed to assure you that the question shall receive full consideration. I have, &c.,

OSWALD CURTIS,
Secretary.

The Secretary for Education, Wellington.

No. 10.

The HEADMASTER, Wanganui Collegiate School, to the SECRETARY for EDUCATION.

SIR,— Wanganui Collegiate School, 18th February, 1885.

In answer to your circular of the 19th January, I beg to say that I was at that time erecting a large carpenter's shop for the use of boys attending this school, and that I have now a class formed, under a skilled instructor, for the study of practical carpentry. The boys are taking a great interest in the matter, and I think it is likely to prove very successful.

Freehand and mechanical drawing forms a regular part of our system, and we have already secured a first prize and an honourable mention at the Auckland Society of Arts Exhibition.

I have it in contemplation to establish evening classes during the winter months, but I do not know yet whether I shall find the means at my disposal sufficient for that purpose.

I may mention that the school is at the present time absolutely self-supporting, the income of the trust estate barely sufficing to pay interest and sinking fund of the debt contracted for building, with insurance, rates, and office expenses. The trustees have spent about £4,000 on the buildings, £3,000 of which is now a charge upon the estate. I have myself also spent in building and improvements nearly £1,000, and fully £900 in school furniture. We have now in the school 120 pupils, 64 of whom are boarders, and of that number 10 are receiving free tuition, 3 free board, 7 board at half the usual rate—viz., for £21 a year—and 2, holding scholarships from the Education Board, have a remission made in their favour of £9 a year in the boarding fees, a privilege which is offered to all those holding these scholarships. On the whole, fees are remitted to the amount of over £400 a year, though the income of the trust estate is less than £700. I venture to think, therefore, that we are not losing sight of the charitable intentions of the trust under which the estate is held (especially considering that our ordinary fees are lower than those at most schools of a similar kind in the colony), and that the Government would be serving the interests of education by making a small grant in aid, say, of the technical instruction it is so desirous of fostering, to an institution the value of which is beginning to be widely felt in this part of the country.

I may add that, although the school is a distinctly Church of England school, we have made a point of admitting boys of other denominations without requiring their presence at such times as would involve their receiving religious instruction, and that we have at the present time two Roman Catholic and many Presbyterian lads in attendance. I have, &c.,

B. W. HARVEY,
Headmaster.

John Hislop, Esq., Education Department.

No. 11.

The REGISTRAR, Canterbury College, to the Hon. the PREMIER.

SIR,— Canterbury College, Christchurch, 27th February, 1885.

Referring to an interview you had with a deputation of the Industrial Association which waited on you during your last visit to Christchurch, the proceedings of which appeared in the *Lyttelton Times* of the 20th instant, and at which meeting you expressed your sympathy with the cause of technical education, I have the honour, by direction of Mr. Malet, the acting Chairman of the Board of Governors, to inform you that the college had already dealt with the matter. Professor Bickerton delivered, during the second term of 1884, a course of lectures on the elements of experimental science, which were attended by seventy-nine persons; and arrangements were made with Mr. E. Dobson, C.E., to give, during the first term, 1885, a course of twelve lectures on building construction, to be illustrated by large diagrams and models, engineering and architectural, taken from the technical hall in the museum. The lectures will be open to the public on payment of a fee of 5s. for the course, the fee being purposely fixed at a low price to enable all classes to avail themselves of the teaching afforded by these lectures; and I now enclose a syllabus,* copies of which I have sent to the Industrial Association and to the large employers of labourers in the city.

You will be pleased to hear that the college has also considered the question of how far the master and staff of the School of Art may be utilised in furthering the teaching of technical education, and I have also the honour to inform you that during the present year Professor Bickerton will deliver a course of popular lectures at night on the applications of electricity.

Knowing the interest taken by you in the cause of technical education, Mr. Malet thought that you would be pleased to hear what action the college authorities had taken, and propose to take, for the advancement of this important subject. I have, &c.,

F. G. STEDMAN,
Registrar.

The Hon. the Premier, Wellington.

* The following are the heads of the lectures: I. (*a.*) Technical education; (*b.*) History of construction; (*c.*) Comparison of ancient and modern practice. II. Building materials. III. and IV. Foundations. V. Walling. VI. Arches. VII. Beams. VIII. and IX. Roofs. X. Floors. XI. and XII. Bridges. XIII. Summary.

No. 12.

The SECRETARY, Otago High Schools Board, to the SECRETARY for Education.

SIR,— Dunedin, 9th March, 1885.

I have the honour to acknowledge receipt of your letter of the 19th January last, forwarding a request from the Minister of Education that the Board would consider the advisability of including in the programme of the high schools instruction in technical arts, and to inform you that a committee has been appointed to give the matter due consideration.

I have, &c.,
C. MACANDREW,
Secretary.

The Secretary, Education Department, Wellington.

No. 13.

The CHAIRMAN, Rangiora High School Board, to the SECRETARY for EDUCATION.

SIR,— Rangiora High School, 24th April, 1885.

In reply to your circular of the 19th January, *re* technical education, I have the honour, by direction of this Board, to state that the Board has carefully considered your suggestions, and entirely agree with yourself in the value likely to result from intelligent training in secondary schools in some arts or manufacturing industry, the initiation in which might properly be given in this and like schools. This Board would most gladly do something to help on the movement initiated by the Government in this direction—a movement we believe that will be attended with good results in the near future. Unfortunately for this Board we have but a very small endowment of £233 value per annum. This Board had to purchase a house for the master, and four and half acres of land on which to build a school, costing altogether about £900. The Board has paid £700 of this amount, one half of which has been raised by private subscription. The neighbourhood being far from wealthy the school fees are low. Then, we have a master, a graduate of St. John's College, Cambridge; and a lady assistant—girls also being admitted. Attendance varies from twenty to thirty. Drawing is taught, as well as languages and mathematics.

Had we but the means of paying a skilled teacher from the School of Art, Christchurch—who we believe is now available—but for one day in the week, or for half a day in school, with a night class for the young mechanics and others in the town, as well as for the more advanced pupils, when instruction would be given in geometrical and mathematical drawing of every kind—machinery as it appears with other power than the human arms, now being applied to almost every industrial art; this Board believes that a small sum of, say, £40 or £50 a year, with a low fee, perhaps, charged to mechanics and others—this Board, in unison with the head-master and the assistant, thinks such an impetus would be given in the direction aimed at by the Government in its success in connection with this school as might induce other schools of far greater importance to make an effort to attain the object aimed at.

I have, &c.,
A. H. CUNNINGHAM,
Chairman, High School Board.

The Secretary for Education, Wellington.

No. 14.

The SECRETARY, Thames High School, to the SECRETARY for EDUCATION.

SIR,— Office of the Thames High School, Thames, 21st April, 1885.

By direction of the Board of Governors I have the honour to send you herewith a copy of a report made to the Governors in connection with a circular letter recently received from the Hon. the Minister of Education on the subject of technical education. The report is from the head-master of the school, Mr. James Adams, B.A.

I have, &c.,
RICHD. A. HEALD,
Secretary.

The Secretary for Education, Wellington.

Enclosure in No. 14.

I HAVE carefully read the circular from the Minister of Education on the subject of technical education, and I am happy to say that the curriculum is year by year approaching the course of studies suggested in the circular. Physics is now taught to all the pupils of the school, except to those of the lowest class, and, so far as we have gone, the lessons are fully illustrated by experiments. Chemistry is to the same extent a part of our course, and very lately Professor Brown expressed his satisfaction with the result of the examination in this subject. We still need additional apparatus and also benches for the more advanced pupils, at which to carry on their own experiments. Mechanical and geometrical drawing are also taught alternately with free-hand drawing. Evening classes were also held for six months during the past year, which were well attended. Several young mechanics and apprentices came for lessons in mathematics and mechanical drawing. It ought, however, to be clearly understood that the chief discouragement to the pursuit of the theoretical knowledge required in a trade, or, in other words, to technical education, is the difficulty that parents experience in having their children taught the practical part of a trade. In this town every master tradesman who can afford to take apprentices is besieged by applicants. Masters of foundries, tinsmiths, and carpenters cannot take on a tenth of those whom their friends desire to be brought up to trades; and this in spite of the fact that a man must be of some means to support his son during the first three years at a trade, when the latter receives but a trifling remuneration,

that would be four or five times as much at any other employment. In addition to this, the apprentice, if indeed the employer will agree to bind himself, can rarely get first-class instruction from a skilled workman. This school can readily supply the theoretical part of the technical education when facilities are afforded to all who desire it of learning a trade under proper instructors. The workshop, however, must not be a pretentious institution where boys play at work, but one that will supply skilful and competent journeymen, who appear to be more in demand than apprentices.

JAS. ADAMS.

No. 15.

The SECRETARY, Auckland Education Board, to the SECRETARY for EDUCATION.

SIR,— Board of Education, Auckland, 27th April, 1885.

With reference to your circular letter, dated the 19th January last, as to the course of study at secondary schools, I am directed to enclose herewith copy of a report received from the Headmaster of the Auckland Girls' High School, to whom your letter was referred by the Board.

I have, &c.,

VINCENT RICE,

The Secretary, Education Department, Wellington. Secretary.

Enclosure in No. 15.

The HEADMASTER, Girls' High School, Auckland, to the SECRETARY, Board of Education.

SIR,— Girls' High School, Auckland, 9th April, 1885.

I have the honour to make the following brief remarks on the circular *re* technical education, which has been forwarded to me by the Board for my report.

There seems to be a feeling growing in the public mind at the present day that the education given in our public schools should assume more of a practical character than has been the case hitherto, that is, that our pupils should be taught such subjects as will be substantially useful to them when they take their place in the world.

In laying down the curriculum for a secondary school for girls, one must be influenced by the consideration as to what subjects will be of practical importance to them in their future life.

The elements of natural history, natural philosophy, chemistry, anatomy, domestic economy, appear to me to be practical subjects for a girls' school; sewing is also a most necessary adjunct to a girl's education, and at the same time the accomplishments of music, drawing, and painting should by no means be neglected. I do not for one moment suppose that all these subjects could be taught concurrently, but the curriculum should be broad enough to contain them all.

By consulting our prospectus the Board will see that provision has already been made for the tuition of the majority of these subjects in our school, though we possess none of the charts and diagrams necessary for the teaching of some of them, and the apparatus at our disposal for the study of others, as, for instance, chemistry and natural philosophy, is lamentably deficient.

Arrangement has been made for the delivery, during the present term, of a course of lessons in natural philosophy, and from time to time, as opportunity is afforded, other subjects will also be taught. Sewing, as a special subject, is taught methodically in the lower school; the upper school devotes three afternoons in the term to it.

The whole school receives instruction in drawing; this includes geometrical and perspective drawing. There is also a very successful class in fancy work held in connection with the school.

I have, &c.,

JOHN F. SLOMAN, B.A.,

The Secretary, Board of Education. Headmaster.

No. 16.

The CHAIRMAN, Taranaki Education Board, to the Hon. the MINISTER of EDUCATION.

SIR,— New Plymouth, 4th May, 1885.

I am about to submit to the Education Board a proposal to initiate a system of technical education on a small scale in this district.

I do not, however, see my way clear to do so without obtaining further assistance for secondary education, as I propose to charge the cost on revenues received from secondary reserves, so as not to reduce the fund for primary education.

I therefore hope that the rents received from the University Reserve in this district will be applied to this purpose, and placed at the disposal of the Board. In 1874 the House of Representatives, at my request, passed a resolution appropriating the rents of University Reserves to the promotion of higher education within the provincial district where the reserve was made, and subsequently this was confirmed by the last section of "The New Zealand University Act, 1874."

I know of no better purpose to which the revenue can be applied than in teaching boys the higher branches of the mechanical arts, such as mechanical and architectural drawing, applied mechanics, and navigation.

There is no day- or night-school in this district where such necessary branches of a practical education are taught, and it seems to me that it is a defect in our educational system that it should be so.

Facility is given for acquiring classical knowledge; but few of our population have the time or the inclination to give years of study to endeavour to master dead languages, of no practical use, when acquired, outside the learned professions.

Here, as elsewhere in the colony, a practical view is taken of these matters, and youths desire to acquire a knowledge of the natural laws which underlie the daily business of life, and which can be applied to the practical pursuits in which they may be engaged.

Knowing your desire to advance the cause of technical education, I am encouraged to believe that you will aid us to the best of your ability. I have therefore to request that the Government will place at the disposal of the Board the revenues derived from the University Reserve, for the purpose of promoting the higher branches of technical education within this provincial district.

I have, &c.,
THOMAS KELLY,
Chairman, Taranaki Education Board.

The Hon. Robert Stout,
Minister of Education.

No. 17.

The SECRETARY for EDUCATION to the CHAIRMAN, New Plymouth High School Board.

SIR,— Education Department, Wellington, 14th May, 1885.

I have the honour, by direction of the Minister of Education, to acknowledge the receipt of your letter of the 4th instant, recommending that the Government should ask the General Assembly to sanction the payment of the rents of the University Reserve in the Taranaki District to the New Plymouth High School Board, for the purpose of promoting technical education in the district.

I am directed to state, in reply, that the Government are unable to advise the General Assembly to divert the proceeds of the university endowment reserves from the purpose for which they were originally set apart, and that it is not the intention of the Government to introduce any measure this session for dealing with the reserves in question.

I may mention that none of the lands in the Taranaki District reserved for a university endowment are under lease. Some portions that had been surveyed were put up to lease some time ago, and offers received, but the proposed leasing fell through.

I have, &c.,
JOHN HISLOP.

The Chairman, High School Board, New Plymouth.

No. 18.

The SECRETARY, Auckland College and Grammar School, to the SECRETARY for EDUCATION.

SIR,— Secretary's Office, Auckland, 27th May, 1885.

I have the honour to forward herewith printed copy of the Headmaster's report on technical education, which would have been sent sooner had I not been under the erroneous impression that it had been sent direct from the school.

I have, &c.,
G. VON DER HEYDE

John Hislop, Esq., Education Department, Wellington.

Enclosure in No. 18.

HEADMASTER'S REPORT.

Technical Education.

I HAVE the honour to report, in obedience to a request from the Chairman of the Board, as to the instruction given in this school in "subjects that have a direct bearing upon the technical arts of modern life."

Natural science forms a part of the curriculum for all boys in the upper school, that is, for nearly half of the whole number. In the lower school anything like exact science would be premature, and, though I know from experience gained elsewhere that even very young boys can profit by lessons in popular and quite elementary science, I have not been able to establish such lessons, because the boys, as a rule, enter this school so deficient in common subjects that an inordinate amount of time is claimed by these. Not only boys from private schools, but, in many cases, those who have passed the Fourth or even a higher standard, show themselves miserably weak in such subjects as reading and spelling.

The branches of natural science taught are chemistry, the elements of physics generally, with somewhat more detailed study of heat, magnetism, and electricity, and applied mechanics, beside physiology. The more advanced boys—those in the highest two classes—do practical work in chemistry. The laboratory, in which about thirty boys can work at once, fitted up at the beginning of last year, suffices in a rough and ready way for actual needs. There is no provision for experiments by the boys in physics, and the apparatus at the disposal of the master for illustration of his teaching is only that needed in going through Balfour Stewart's Primer. For the illustration of applied mechanics there are only a few models of such simple machines as pulleys, inclined planes, and the like, and one of a beam-engine. This last has been worked before and explained to the class. An addition to the stock of models would greatly add to to the value of the teaching.

It has been my wish to establish a special "natural-science side," but the upper classes are already so starved, in consequence of the short stay of most of the boys, that further subdivision would be very extravagant. Our arrangements, too, are largely governed by the programme for senior university scholarships, which favours the study of many subjects, and consequently special attention to none.

Drawing is taught to nearly five-sixths of the boys in the ordinary course; those who do not learn it are the boys in some of the higher classes, in which no time can be spared for it in school

hours (for these, however, an opportunity is offered for taking it out of school hours, without extra fee), and those who need extra time for writing, or whose parents do not wish them to learn drawing. The boys on the "modern side," that is, those who do not take Latin, devote a portion of the time saved to extra drawing, as well as to mensuration. The following are taught in various parts of the school: Free-hand perspective drawing from models and from memory; drawing from the flat, including decorative drawing; mechanical drawing, comprising projection of solids, scale drawing from bolts, nuts, brass mouldings, &c., and working drawings of articles constructed in the workshop; and geometrical drawing. For this last Gill's little book was recently used; at present the text-book is Burchell's Plane Geometry. Practical illustrations of the use of the problems given are supplied as far as possible. In some cases, as recently in that of a boy about to become a boatbuilder, attention is given to special kinds of drawing likely to be useful.

The circumstances of the foundation of the workshop, at the commencement of last term, may be briefly recapitulated. At my instance the ex-cadets resolved to devote to this purpose a considerable sum of money which the cadet corps had in hand when, upon alteration of the Government regulations, it was resolved to seek disbandment. A building to accommodate twenty boys was erected, at a cost of £70, by the Board, which also slightly increased the salary of the drawing-master, a trained civil engineer, in consideration of his acting as instructor. With the funds supplied by the ex-cadets a good stock of the common tools was at once purchased, and four lathes and one fret-saw were ordered from England. Applications for admission were so numerous that it was found necessary to form two classes, to work at different times, and to put off, for the time being, some of the younger applicants. Ex-cadets pay nothing, others 7s. 6d. a term, towards cost of maintenance of stock, &c. Each class contained last term rather more than twenty boys, and received two lessons a week, after school hours.

I have been very conscious of the danger, which, indeed, at least in Auckland, is already becoming more than a danger—a reality—of an excessive supply of professional men and, still more, of clerks. Moreover, what I know of the advance made in England in respect of scientific and modern education would make me discontented with a course for this school which should not include, side by side with classical and literary studies, such subjects. I have, therefore, suggested and introduced developments in these directions, and in so doing I have received the willing and, so far as the funds permitted, liberal support of the Board. To introduce "more direct and immediate training for special careers" would not be wise, nor does the circular suggest this, but in respect of what it does suggest—the recognition of subjects "preparatory to" this—much has been done, as will be seen from what I have said above. That more has not been and, I think, cannot be done at present is due to the want of preparation in common subjects of the boys who come to us, and to the short stay of most boys in the school, which hampers all departments of study alike. The clause in the trust deed, under which the school holds its endowments, dealing with the education to be given, runs thus: "In addition to the usual course in English and the mathematics, and in such other subjects as the trustees for the time being may direct, all students attending such college or school shall, if they desire it, receive instruction in the Greek and Latin languages." Here, as might be expected, English, mathematics, and, for those who desire them, classics are made prominent by being prescribed absolutely, whilst other subjects are left to the discretion of the governors. And, although other subjects, such as those mentioned in the circular, are undoubtedly very desirable, it seems to me to be clearly the duty of the school to make it its first aim that no boy leave it illiterate. But when boys enter ill-prepared, and leave early, it is as much as can be done, if indeed it can be done, to secure this, and but little time is left for other subjects, which, valuable in themselves, should supplement, not replace, that common education which every man ought to possess. The removal of this, the great difficulty, is, of course, beyond the power of the Board.

Thus, the only immediate action which I have to suggest to the Board is that the stock of models, apparatus, &c., by means of which the teaching can be made more practical and effective, should be increased, and larger provision made for the practical work by the boys.

I should, perhaps, have made mention of the "modern side," which, with the approval of the Board, I initiated some time since. It has not been so freely used as, from public and private utterances on the subject, I had expected. In many cases I have been unable to obtain the transference to it of boys who had plainly no bent for classical studies. There seems to be an impression that it is only for the lazy—and, indeed, it is preferred by these. The smallness of the number of boys who join it prevents me from giving it the complete organization which I would wish, and makes it costly to give it any organization at all.

This school is one of those which are bound to offer opportunities for evening students, and the duty has not been forgotten. The evening classes have, however, never attracted a reasonable number of students, and have now, for the second time, died of inanition. The least unsuccessful were those in Latin, mathematics, and French, which appealed to undergraduates and those preparing for professional examinations. Such students, so far as regards Latin and mathematics, probably now prefer the evening lectures of the Professors of the University College. My experience in England (Manchester) was that the subjects most appreciated were the artistic and scientific; therefore, in offering classes in chemistry and drawing I hoped for good results. These classes were duly advertised at the commencement of each of several terms, but on no occasion did more than three applicants give in their names for either.

With few exceptions, those who have spoken to me of the "unpractical" nature of classical and linguistic or literary studies have seemed to regard scientific education as scarcely more useful, and to wish for their sons either such a special training as a school not of a definitely technical character cannot impart, or, much more frequently, mere preparation for the career of a subordinate in a house of commerce. I suppose the reason to be that, in spite of overcrowding, there are openings in this direction, whilst, in the present condition of the colony, there are scarcely any

ready-made opportunities for the commencement of careers in which scientific education would be useful. No doubt, did there exist a large class of youths conscious that they possessed a decided bent for artistic or scientific pursuits, openings would be found or made for them. One method of stimulating the growth of such a class has been tried in Great Britain with excellent results in the system of examinations, with prizes and certificates to successful students and rewards to successful teachers of these subjects, maintained by the Science and Art Department. This system has induced many to turn their attention to the subjects recognised, who, probably, would not otherwise have done so, but having done so have discovered a natural aptitude for them. It has introduced or improved the teaching of such subjects, not only in primary schools, but in many of the class to which this school belongs, that of large town grammar schools. To industrious, able, and enterprising students and teachers it holds out encouragement and applies a stimulus. As an assistant-master in the Manchester Grammar School I saw a good deal of the results of the system, and, with the exception of some danger of "over-pressure"—against which safeguards might, no doubt, be devised—they seemed to me wholly good. I believe that nothing could better further the objects which the Minister of Education has at heart than the adoption of some such system, and would respectfully ask the Board of Governors to take into consideration the propriety of making a representation to him upon the subject.

I have, &c.,

6th February, 1885. C. F. BOURNE, Headmaster.

No. 19.

Mr. JAMES ROBERTSON to the Hon. the MINISTER of EDUCATION.

SIR,— Wellington, 20th June, 1885.

In compliance with your request I have the honour to furnish you with a report of the industrial classes in connection with the Wellington College, held at the tramway-sheds.

The classes were established by Mr. Joseph Mackay, Principal of the College, in the month of February, 1885, and, pending the erection of a workshop on the college ground, temporary accommodation was found at the tramway-workshop, Adelaide Road, the proprietors (Hon. Dr. Grace and Mr. R. Greenfield) granting their use free of rent. The company's engineer, Mr. James Robertson, was appointed instructor in engineering, blacksmithing, and carpentry; his remuneration being a fee of 5s. per quarter from each pupil.

The class opened with forty pupils, whose ages vary from eleven to fifteen years. Thirty of them chose to learn wood-working, and ten iron-working. Each carpenter was required to furnish himself with a saw, plane, hammer, and rule, costing 15s. This instruction was but imperfectly carried out, but the generous manner in which individual boys allow their valuable tools to become a common stock is one of the most pleasing features in the scheme. The tools used by the iron-workers are lent by the Tramway Company.

The articles made by the pupils are of a varied character. It was my intention to have given the boys simple structures to make, which would have illustrated the mathematical principles they were learning in the class-room; my idea being that a knowledge of mechanical principles would be of greater value to the pupils than mere manual dexterity in shaping wood or iron. I conceived that the great aim of technical education was the creating scientific workmen, and, as the boys were being taught theoretical mechanics at college, the classes at the tram-sheds should show their application to the industrial arts.

It is with regret that I have to inform you that my intentions have to a great extent been frustrated by the parents of the boys, who insisted on their making useful articles of furniture. Of course, even a kitchen-table may illustrate a scientific law, but I should have preferred the boys to have made models of engines, bridges, or structures, which contain whole groups of scientific principles.

The articles made by the carpenters may be described as household furniture, tables, garden-seats, wall-brackets, chests, wheelbarrows, dog-kennels, indian clubs, &c. The engineers are learning to forge, file and turn iron; the articles made by them are tools for reproducing other articles, and consist of hammers, chisels, squares, tongs, &c., as these boys intend to follow out the trade of engineers. The blacksmiths learn to forge and weld iron, shoe horses, and repair carts; they are the sons of runholders, and are expected to be able to do the repairs on the paternal estate. A number of the articles are entered as exhibits for the Industrial Exhibition.

Each pupil is entitled to instruction for two hours each week, but the workshop is open at all times for them to work alone. Many of the boys spend their half-holidays in the shop, and a number come early in the morning before college hours. The whole work of the class is carried on outside of school hours.

The material out of which the articles are made is paid for by the boys, the iron and wood being supplied to them at cost price.

In conclusion, I have to add that should you require any further information on the subject I shall be glad to furnish it. I enclose a letter written to the Press some time ago, in which I endeavoured to show that what is required in New Zealand is the teaching of applied mechanics, as theoretical principles are abundantly taught under the present system.

I have, &c.,

The Hon. Robert Stout, Minister of Education. JAMES ROBERTSON.

No. 20.

Mr. D. PETRIE, M.A., to the SECRETARY, Education Board of Otago.

SIR,— Education Office, Dunedin, 6th May, 1885.

I beg to submit for the consideration of the Board the accounts recently published in "Nature," of the peripatetic system of teaching science, as carried out by the Birmingham School Board.

An elaborate programme of lessons in elementary science is prescribed for the public schools of New Zealand, but in this district, at all events, there has been very little success in carrying out the programme. Where attempts have been made to teach it in whole or in part the classes have shown little interest in the subject, and have but rarely gained a satisfactory knowledge of the principles taught. The failure to carry out this portion of the school work is due in part to the indifference of the teachers, but chiefly to their want of training in manipulation and in good methods of teaching the subject, and the absence of apparatus suitable for giving experimental demonstrations.

As the teaching of the elements of science in the scientific spirit to the more advanced pupils in the public schools is a matter of great importance, I would respectfully suggest that the Board should follow the example of the Birmingham School Board, and make provision for the teaching of science on the peripatetic system in the schools of the city and of the immediate suburbs.

There is every reason to believe that the system would be as productive of good results here as in England. Were a qualified science lecturer, or rather teacher, appointed on this footing, the teachers and pupil-teachers in and around Dunedin would gradually get accustomed to his method of teaching the subjects, and, if they moved to other districts (as many of them would), they would be able to give a certain amount of instruction in science on the same lines. In this way what at first sight appears a boon to Dunedin only would ere long be largely shared by the country districts also.

In "Nature," vol. 30, page 24, particulars are given of the cost of the scheme carried out in Birmingham:—

A central laboratory cost	£700
Apparatus	300
The total first cost was	£1,000
The annual working expenses were as follows:—	
Salaries of demonstrator and assistant	£400
Chemicals and apparatus...	50
Expense of moving apparatus about	50
Total of year's working expenses	£500

It is likely that the first cost, as well as the annual working expenses, would be somewhat greater here than in Birmingham, but the difference would not be great. An annual outlay of £600 would, I think, keep the establishment in working order. To my colleagues and myself it appears that the advantages to be secured by the carrying-out of science lessons on the proposed system would form a very excellent return for the money expended. I shall be happy to furnish the Board with a fuller account of the system should it be desired.

I have, &c.,
D. PETRIE,
Inspector.

The Secretary, Otago Board of Education.

No. 21.

TECHNICAL INSTRUCTION ON THE CONTINENT.

[TRANSLATION.]

THE INSTRUCTION OF BOYS IN MANUAL WORK.

Report presented to the Minister of Public Instruction by M. H.-N. Van Kalken, Professor at th Brussels Normal School.

FOR some years past serious efforts have been made in certain European countries to bring practical instruction in manual work into connection with the instruction of the primary school. The desired object is not to prepare the child for a definite trade, as is done in certain schools specially intended to train good artisans, but merely to make instruction in manual labour an effective means of exercising the hand so as to render it more capable of serving man, and also of compelling the child to see well and to observe well—a matter of the first importance in the culture of the intellectual faculties in general.

This instruction, then, has the incontestable utility of being based entirely on the personal observation and work of the child.

Need we be astonished if, in our days when so many important reforms in education are being made, the introduction of manual work into the primary schools is placed in the order of the day, and if in many countries intelligent men are seen actively occupying themselves with the question of how this introduction may best be brought about?

In Sweden and in Finland this instruction is already considered as forming an integral part of primary education; in different parts of Germany schools of manual work for boys have been erected; in France this instruction is the subject of serious attention; in Holland it is imparted to 1,600 pupils in thirty-seven different communes; in Belgium, although not yet actually in existence, it is accepted in principle, since the general order for primary normal schools includes, amongst

other items, the following: "That every normal school should possess a laboratory of physics, some chemical apparatus, collections of natural history and agriculture, sets of magic-lantern slides, a garden of arboriculture, and a small botanical school. A workshop for manual labour will be established in every normal training school for teachers. The pupils will there exercise themselves, during certain hours of recreation, in putting together simple and easy apparatus for purposes of demonstration in connection with primary-school instruction. The manual work in the workshop is to take place during recreation as follows: Two hours a week for pupils in their first two years of study, and one hour for the others."

You were pleased, Sir, to commission me to attend the normal course of manual work for teachers, which was given at Dresden between the 16th July and the 26th August, 1882, and to submit to you a report on the subject of that mission. I endeavoured to acquit myself as well as possible. I will attempt to give in what follows a history of the efforts that have already been made to introduce instruction in manual work into the primary school. It will be easier then for me to show with what aim the course at Dresden was organized, and to what extent this object has been attained.

The history of education teaches us that the principle of putting instruction in manual work into relation with primary instruction was enunciated a long while ago.

(1) Comenius, (2) Locke, (3) Rousseau, showed fully in their writings how useful it would be to make these two courses of instruction advance side by side. August Hermann Francke was, however, the first in Germany to introduce into his school the practical application of these ideas. Already in 1713, the Pedagogium, which had just been erected at Halle, possessed not only a botanical garden, a museum of natural history, a chemical laboratory, and museums of anatomy, but also workshops for turning, glass-polishing, painting, design, &c.

During the second half of the eighteenth century we see in Germany a great number of industrial schools arising, where the children who attended the primary schools and those who had already left school were initiated into the elements of different trades.

The aim of these establishments was to preserve the child from a pernicious indolence, to give him the taste for and the habit of work, and to place him in a condition worthily to fill his place in society. But when the educational value of these schools had gradually come to be less highly esteemed, and more importance was attached to the material benefits that might be drawn from them, they fell into an utter decline.

Pestalozzi was also impressed with the value of manual work as a means of education. M. Jules Paroz writes in his History of Pedagogy: "In manual work, as in instruction, Pestalozzi had less in view actual profit and acquirements than the development of the organs and faculties. Manual work should render a child dexterous, and consequently capable of learning later on a trade suitable to his tastes. Study, for its part, should cultivate the intellectual faculties, attention, reflection, memory. This tendency has remained a characteristic feature of the Pestalozzian system of education."

Pestalozzi himself explains with his usual sincerity, in his book, *Wie Gertrud ihre Kinder lehrt*, why the efforts he put forth met with no success. Fellenberg, a contemporary of Pestalozzi, having also introduced manual work into his institution at Hofwyl, saw his efforts crowned with so much success that people came from all parts of Europe to study his system of education. Salzmann, another contemporary of Pestalozzi, founded, after leaving the Philanthropinum at Dessau, a similar institution at Schnepfenthal, where manual work was also considered an essential part of a good education. For this reason the pupils were occupied in gardening, in pasteboard-work, in joinery, and basket-work, taking turns in their exercise at this employment. In his treatise, *Ueber die Erziehungsanstalt*, Salzmann says, "*Die Kenntnisse hält man hier für minder wichtig als die Ausbildung der leiblichen und geistigen Kraefte der Zœglinge*" (Less importance is attached here to the acquirement of knowledge than to the physical and intellectual development of the pupils).

We might further speak of Keilhau, where Froebel laboured to put his ideas into practice, but this seems to us superfluous, as the whole system of Froebel rests on this dictum, that without activity no development is possible. He says, for example: "Manual work not only invigorates the body, but exercises so happy an influence over the mind and its different tendencies, that when a man has been retempered, if we may so express ourselves, in the refreshing bath of manual labour, he only finds himself fresher and more vigorous for his intellectual pursuits. . . . . In our days children are occupied overmuch with what is intellectual; sufficient importance is not attached to physical work, although nothing can be more advantageous for their development than the instruction they acquire by the exercise of the creative and productive faculty which they bear within them." We may say, in general, that manual work, considered as a means of education, has met with no gainsayer anywhere. We also see in different European countries establishments erected where neglected children, by being accustomed to activity and order, through regular occupation, have become useful members of society.

Instances are found in Belgium, at Ruysselede; in France, at Mettray; in Germany, at the Rauhe Haus, near Hamburg; in England, at the Royal Victoria Asylum; and in Holland, at Mettray, near Zutphen. But in these institutions the end in view was the education of a certain class of children only, and there was no thought at all of introducing manual work into the common schools until, in 1876, Clauson Kaas, of Copenhagen, went to Berlin to deliver a lecture on the subject; whereupon lively discussions arose, first in Germany and afterwards in other countries, on the utility and expediency of this kind of training in educational establishments, and especially in primary schools.

Clauson Kaas was twenty years ago an official in the little town of Nestved. The locality not even possessing a good school, he found himself compelled to set about the education of the children, and it was thus he conceived the idea of making education, properly so called, advance side by side with the practical training of the hand. Other parents in the neighbourhood soon

desired to see their children profit by his lessons, so useful and so attractive, and thus Clauson Kaas soon found himself, without wishing it, at the head of a small school. In 1866 he returned to Copenhagen, impelled by the desire of diffusing his ideas through a wider circle. Success crowned his efforts to such a degree that he resolved to devote himself entirely to the teaching of manual work. In the execution of this purpose he secured the co-operation of an intelligent teacher, M. Rom, of Jutland; and in 1870 appeared two monthly reviews, *Nordisk Husflids Tidende* and *Husflids Meddelelser*, destined to disseminate through the whole of Denmark the theoretical and practical knowledge of this branch of instruction.

The two fellow-workers propagated their ideas by giving lectures in different parts of the country. At last, on the 18th March, 1873, the *Dansk Husflidselskab* was organized at Copenhagen, a Danish society for domestic industry, which soon included a large number of local sections both in the towns and in the country. At the same time Clauson Kaas undertook, for the benefit of male and female teachers, temporary courses, which are still given regularly every year during the six weeks of the summer vacation. In these courses work is carried on regularly for ten hours a day; the elements of bookbinding, pasteboard-work, carpentry, wood-carving, basket-making, brush-making, and straw-plaiting are learnt; the pupils are exercised in the use of the lathe and the circular saw.

M. Bouman, who was sent in 1879 by the Netherland society *Volksonderwijs* to Sweden and Denmark to study there manual art, attended one of these courses, about which he says, "The course was attended by thirty-eight persons, for the most part teachers, both male and female, from different parts of the country. There was one teacher with his wife. It was a real pleasure to see them working with indefatigable ardour and zeal — the one making a wicker arm-chair, which would certainly occupy the place of honour in his home; the other constructing baskets, the use of which in the household she seemed already to be calculating. Everybody else was zealously employed in basket-making, pasteboard-work, plaiting, and in the construction of various objects of household economy. Each displayed to us with the greatest satisfaction the work already accomplished within the past fortnight; and all were evidently happy at the unexpected result of these few days' exercise. The class was usually made up of twenty scholars, who received either from the Government or from particular societies an allowance to cover the expenses of their sojourn. On this occasion a larger number of pupils presented themselves, but Clauson Kaas was unwilling to refuse to any one permission to attend his class."

In 1873 the International Exhibition at Vienna made known in other countries of Europe the system of Clauson Kaas. In 1876 the *Centralverein für Arbeitende Klassen* invited him to deliver a lecture at Berlin. As a consequence of this lecture certain influential men took steps to organize a normal course at Berlin on the model of those at Copenhagen. Various circumstances opposed the success of this enterprise; nevertheless, M. Hoehn, a master in Berlin, was sent to Copenhagen to attend the course of manual work there. In some places attempts were made to introduce these occupations into the primary school, but there the matter has rested. However, on September 6th, 1879, Clauson Kaas again delivered a lecture at Harbourg; his system once more became the subject of discussions more lively than ever, and finally, after much difficulty, a normal course was successfully organized at Emden, which, under the superintendence of Clauson Kaas, was conducted during the six weeks' vacation in 1880. The aim of this course of instruction was to make German teachers conversant with the elements of the trades taught, and to render them capable of giving instruction in those subjects themselves. Sixty-three persons subscribed themselves as adherents, amongst whom were two schoolmasters from Baden, three from Bavaria, six from Emden, five from Bremen, two from Lubeck, one from Königsberg, one from Strasburg, one from Amsterdam, and the rest from Hanover.

The course at Emden attracted the attention of every one engaged in education. The ideas of Clauson Kaas were discussed, and critically examined at meetings and in the newspapers; but what went further to prove that they had taken root in German soil was the erection of schools of manual work at Dresden, Leipsic, Görlitz, Strasburg, and in a great many other towns. With respect to some of these schools I shall shortly enter into more detail.

In 1880, Clauson Kaas approached the Minister of Public Instruction in Prussia and requested him to send a Commission to Denmark and Sweden. The Minister complied with his request, but it seems that the Commission experienced the greatest disappointment, for when it arrived in Denmark it nowhere found a school where manual arts were taught. M. Bouman had been the victim of the same disappointment in 1878. The like also befel a French Official Commission, which sought in vain in the schools of Denmark for any union of manual work with primary instruction. Be it as it may, Clauson Kaas, by his untiring efforts and zeal, had not only in his own country, but also abroad, elicited strong interest in manual work.*

*In speaking of an article written by me in the educational review *L'Avenir*, the journal *L'École nouvelle*, edited in Paris, passed the following remark: "May we be permitted to remove at once an error that we find in the excellent Belgian review *L'Avenir?* In an article on manual exercises, it is said that the father of instruction in manual exercises is M. Clauson Kaas, a Danish lieutenant, who undertook to give manual instruction, regular and progressive, not for the purpose of making artisans, but for the sake of the educational importance of the practice itself. As respects Denmark that may be true, but elsewhere he had had many precursors; and these precursors did not limit themselves to the manufacture of brushes, spoons, handles, boxes, baskets, shelves, &c; they had made a synthesis of manual work, and drawn out a methodical programme of a rational instruction in working on materials. We do not speak even of agricultural labour, the first to be advanced since Pestalozzi. But as abroad little is known about what is done in France, and as the schoolmasters of our country, as little informed as foreigners with regard to the history of education among us, will certainly diminish nothing of their enthusiasm for everything that is not French, we may be permitted to recall the fact that as long ago as 1832, César Fichet, at the school in Rue Basse-du-Rempart, created in its entirety that methodical instruction which Bardou praised so highly. The manuscripts of that able teacher have been allowed to be lost, but we could still reconstruct his programme. Even in 1864, in the review *L'Ensignement Professionnel*, Guémied, Gaumont, and others gave us the opportunity of recovering the scheme. Since then, although the establishment of the schools of La Villette and of the Rue Tournefort was inspired by ideas at that time promulgated, the synthetic part of manual work, which was the very basis of our industries, has been lost

In Belgium, attention was drawn to Clauson Kaas and his system by M. Herman Pergameni, on the occasion of a speech delivered by M. Paul Janson to the General Assembly of the Education League, in which, among other reforms in primary instruction, he insisted on the necessity of giving a place of honour in the popular schools to the practice of manual work, and the first elements of the principal industries and trades.

In Holland, M. Kerdijk had already, in 1876, made known the system of Clauson Kaas by an article published in the *Bode*, the organ of the Netherland Society *Volksonderwijs*. In 1879 this same society sent M. Bouman, Director of the Normal School at Amsterdam, to Denmark, Sweden, and Norway, there to learn how far manual work could be placed in connection with primary instruction. Later on, the *Maatschappij Tot Nut van't Algemeen*, sent the chief schoolmaster of Amsterdam, J. Stam, to Emden, there to attend the course of Clauson Kaas. But the first who actually took the initiative in manual work in a school was the schoolmaster Groeneveld, of Rotterdam. Already, in 1876, he had devised for his pupils a series of very simple exercises; then he gave a course for teachers at Rotterdam, and finished by devoting himself entirely to this kind of instruction. We have already said that in Holland manual instruction is given in thirty-seven different communes to more than one thousand five hundred pupils, amongst whom six hundred receive these lessons gratuitously. The fee for the pupils who pay is from two to twenty francs a month. The age of the children also varies widely; in some communes they begin with children of seven, in others we meet scholars of sixteen and seventeen. In the greater part of these schools two hours a week are devoted to instruction in manual work. Some among them count a large number of scholars. We will instance Dordrecht, with 250; Arnheim, with 147; and Amsterdam, with 145 scholars. The instruction comprehends in general pasteboard work, plaiting, and the use of the circular saw. In the Netherlands, as well as in Germany, there is but one voice in praise of the zeal and assiduity with which the pupils attend to their lessons. At Delftshaven it is quoted as a very good result that the twelve pupils, having attended during a period of two years a course of manual work, chose each a trade immediately after having completed their primary-school years. In general, wherever I have met with good schools of this description, analogous facts have been communicated to me. Nowhere, however, is instruction in manual arts more extensively carried on than in Finland, where, since 1866, it has been classed among the obligatory branches of normal and primary instruction. Finland owes this benefit to Uno Cygnaeus, who, by reading the writings of Pestalozzi and Froebel, had learnt the whole value of manual work as a means of education. In 1858 he was commissioned to go and study the system of instruction in Sweden, Denmark, Germany, Austria, Switzerland, and Holland. On his return he was nominated Inspector of Schools in Finland, and, thanks to his persevering efforts, manual work was introduced as an obligatory branch in all the schools of the country.

Sweden is also to be reckoned among the countries where manual work occupies a real place in popular education. Likewise, in a great number of normal schools, this instruction is given regularly. At Landscrona, for example, the boys' school is so organized that instruction in manual work is given at the same time as instruction in other branches. About four hundred and twenty-five boys there receive, daily, five to six hours' lessons, and the work is so distributed that every child has about two hours' manual exercise each day. In this school, a number of objects very simple, but at the same time of great utility, are made. There it is maintained above all that the child should himself invent and construct, and that much more is accomplished in the case of an object not so well made, but which arises entirely from the initiative of the scholar, than in the case of remarkable objects for which he would have been compelled to seek aid and advice.

Sweden also possesses two interesting Sloejdseminar,* one at Gothenburg, the other at Nääs. The latter is under the direction of MM. Abrahamson and Salomon. Manual arts are there considered necessary in a popular school, and it is consequently found necessary also to train masters capable of teaching them. In principle, the ideas of Salomon differ essentially from those of Clauson Kaas. Whilst the latter seeks his exercises in the first elements of different trades, Salomon finds that wood-work in general constitutes the best counterpoise to studies which involve bodily inactivity. We shall return to this point after having spoken of the Dresden course, and we shall then inquire which of the two systems should have the preference in school. Letters from Nääs, sent to the journal *Nordwest*, inform us that the third course, which was given this year, beginning on the 19th of July, counted among its scholars three Frenchmen, three Germans, three Danes, two Finlanders, and two Swedes. The terms made with teachers by Abrahamson, who enjoys a large fortune, are so favourable that, from all sides, people come to take part in his course.

It was also in the month of July that the normal course of manual work at Dresden was started, on which, I think, I must enter into greater detail.

I have thought it well to sketch, in broad features, the movement which has been set on foot for some years past in different countries in favour of manual work, in order that it may be seen that the course at Dresden is only a fresh and noble effort to solve this question, which is so important to the masses especially. Our aim, besides, has been to set forth clearly by this introduction—First. That the tendency of our age to supplement intellectual with manual work has

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sight of. Finally it is only just to trace back to the Encyclopædists, especially to Diderot, the suggestion which is being followed to-day, which was supported by Pestalozzi and Froebel, influenced, however, rather by Rousseau than by the eighteenth-century savants."

I completely overlooked the fact, though it is a fact, that in France there has been an active effort for some time to introduce manual work into the schools. Among the gentlemen who this year followed the normal course of manual work at Nääs there were two professors from Paris and a school-manager from Nancy sent by the French Minister of Public Instruction. The French Government also instructed MM. Salicis, and Ruhlman, senior and junior, to visit Germany, Denmark, Sweden, Norway, Finland, and Austria, to make themselves acquainted with the schools of manual work. This Committee, setting out in May, expected to return in October.

* Sloejd: All manual work that does not belong directly to a trade.

already for ages past been regarded as a necessity by the greatest educational authorities. Second. That for some years past we have been actively occupied with the question of ascertaining (*a*) whether manual work ought really to occupy a place in popular instruction; (*b*) what is, in that case, the simplest manner of introducing it in a regular and systematic way? Third. Whether it is possible to come to an agreement as to the kind of manual work which will render the greatest service to intellectual development, and to the exercise of both eye and hand.

A normal course of manual work at Dresden, has been initiated by the *Gemeinnützíger Verein* of that city, and the *Gemeinnützige Gesellschaft* of Leipsic. These two philanthropic societies, which are actively occupied with the progress of primary instruction and of society itself, enjoy the general esteem of the country. Their courses having been opened with the object of training teachers capable of giving instruction in manual work, with a generous liberality, teachers from various provinces of Germany, and even from abroad, were permitted to take part in the courses and in the work.

On the 1st May, 1882, the Committee of the two societies published a circular, of which this is the summary: "To accustom youth to work, by instruction which renders the hand dexterous at making various articles, at the same time occupying the child in a useful and agreeable manner, has long been a subject of earnest consideration to men who are interested in the harmonious, healthy, and natural development of the people. Putting on one side the indisputable importance that manual work would have as a supplement to instruction for general educational purposes, it is certainly important for our country of Saxony—so thickly populated and so much engaged in industry—that our scholars should learn while still at their desks to know and to appreciate practical work, that they should be accustomed to use their eyes and exercise their hands; and, for this purpose, it is desirable that our boys, whatever may be their destined career, should be initiated into a knowledge of the materials most extensively used in industry, to the manipulation of the principal tools and to the construction of articles that are most in use. Already, during the last century, efforts were made in Germany and Switzerland to put this idea into practical execution, and men like Pestalozzi, Froebel, Gutsmuths and Herbart, defended it with ardent conviction. In spite of all these efforts, in spite of the voices which were raised to establish the pedagogic value of manual work, in spite of the success which crowned the introduction of these occupations at certain establishments, it was not found possible to give them a permanent existence in Germany. Latterly, a great step forward has been taken in the countries of the north—Sweden and Denmark; in the last-named country Clauson Kaas especially, as much by his writings as by his action, has laboured industriously for the success of the work. With the material and moral support of the Minister of the Interior and of the Minister of Worship the *Gemeinnützíger Verein* and the *Gemeinnützige Gesellschaft* have undertaken to organize, under the direction of M. Clauson Kaas, a temporary course where Saxon teachers will be able to familiarise themselves with the elements of the trades best fitted to exercise the hand and to extend domestic industry. The course will chiefly consist of joinery, carving in wood, working in metal, pasteboard work, and the use of the circular-saw. The course will be given at Dresden, commencing on 17th July, in the great hall of the *Altes Kadettenhaus*, graciously put at our disposal by the Minister of Finance. The support of the Minister of the Interior makes it possible for us not to demand more than forty marks (£2) for attendance at the course, and to hand over gratis to the teachers all the articles they make. Finally, the Committee begs the Communal Councils and the school authorities not to put any difficulty in the way of teachers who wish to follow the course, though their attendance should demand a prolongation of their summer vacation."

This circular was accompanied by a brief set of rules, containing, amongst other provisions, that those who attend must furnish themselves with a blouse and apron; that they are allowed to work out of fixed hours; that they are strictly forbidden to smoke in the workshop; and, lastly, that all objects made shall be exhibited in public immediately after the close of the course.

The ceremonial inauguration of the course took place on the 16th of July, precisely at noon, in the great hall which was to serve as a workshop. The walls were decorated with mottoes; the benches, the tables, and the tools were so arranged that the sixty-three occupants, divided into six groups, could easily work all at once without getting in one another's way. The superintendence of the different sections was intrusted to men well known as excellent workmen, notably MM. Leonhard (pasteboard-work and binding), Hartmann (wood-carving, &c.), Kühnsscherf (metal-work), Kolbe (basket-making), Dohnert (the use of the circular saw), and Brunner (joinery). The division of work was so regulated that each group might have a fresh occupation every day. For instance, Monday, carpentry; Tuesday, carving; Wednesday, pasteboard-work, &c. On Monday evenings, from 8 to 11 o'clock, the students assembled to talk about the different questions connected with instruction in manual work; these were familiar meetings, with no official character, but where the educational value of manual work was diligently discussed, and much consideration given to the obstacles which the introduction of this kind of instruction into the school would yet have to overcome. On Wednesday evenings, from 8 to 11 o'clock, the official meetings took place. One might then meet in the hall members of the Committee, journalists, and other persons interested in the subject. On these occasions Clauson Kaas was wont to captivate the general attention by his words of eloquent simplicity. Then it was that he explained his system with that deep conviction and that enthusiasm which one meets with only in those who are defending a good cause. The students, however, did not invariably agree with the master, which circumstance gave rise to discussions clearly showing that the German teachers, although in principle partisans of the system of Clauson Kaas, do not always approve of the manner in which he wishes it put into practice.

The following are the main points of the lectures of Clauson Kaas upon which a general agreement was come to: 19th July: Domestic industry is not to be confounded with the manual work known in Denmark under the name of *Huusflid*. Domestic industry is usually only occupied with

one kind of work, and has, above all, for its object to increase the resources of the family. The *Huusflid* has for its object to accustom a man to help himself in situations where ordinarily the assistance of another is requisite. Both should be cultivated and encouraged. Above all, it is by cultivating in young people the love of work that we attain it in the most rational manner. 26th July: The temporary course at Dresden cannot give all the manual exercises in a regular and progressive style. A choice has had to be made so as to render the instructor as much as possible capable of undertaking himself this instruction with pupils. The first exercises should be extremely simple; the instructor will easily find a series of occupations which will allow him to follow a good method. The child ought to learn the use of measure, compass, and square. The work will give power to the muscles and accuracy to the eye. The child should above everything get accustomed to work with taste, to do good work. 2nd August: Manual work should be an element in a public school. This has long been the case in northern countries. (Details on the organization of these schools.) The expenses are not exorbitant. By expending a sum of 750 francs a workshop can be fitted up for forty scholars. In this workshop eight pupils could be occupied in carpentry, eight in wood-cutting, six in wood-carving, six in basket-making, six in brush-making, six in binding, and three in pasteboard-work. There would be eight benches and all tools needful for their work. In a school where only wood-cutting, wood-carving, and basket-work are undertaken, the initial expenses would not exceed a sum of 100 marks. Almost all the new schools possess a special hall for drawing and one for gymnastics, so that it would be no difficult matter for every school to have at the same time a workshop. At the close of his address Clauson Kaas announced that every day, from 11 to 12 o'clock, he would himself give a practical lesson to children of from six to ten years of age. 9th August: Clauson Kaas shows a great number of articles made of pasteboard by children and adults. He explains in a few words that exercises in pasteboard-work can render important services to instruction in geometrical forms.

Let us add a few words about the practical part of the course. We have already indicated the trades the elements of which are taught. Pasteboard-work has led up to the manufacture of copy-books, drawing-books, portfolios, geometrical forms, boxes for specimens, and fancy boxes. Two days were given up to bookbinding. The use of the circular saw was known by the greater part of the pupils. It is an unhealthy occupation, and wearisome when it is a matter of cutting out figures which are over elaborate, and usually in bad taste. Nearly all models for cutting out share in these defects. The professor, M. Döhnert, had taken care to choose as his models very simple objects, such as a watch-stand and a matchbox. Clauson Kaas considers that cutting out in wood is one of the most beautiful and useful exercises for children. Our own opinion on this kind of occupation is just the opposite. It is an unhealthy exercise, for the child has to remain always in the same position, with the back bent and the chest compressed; the eyes, nose, and mouth get filled, little by little, with fine sawdust. It is a wearisome exercise, since the work requires not the least reflection; the child follows mechanically with the saw the designs traced on the wood. Wood-carving is limited to very simple exercises from a model. It is a kind of work eminently fitted to develop the taste for the beautiful. I should, however, like to see this instruction based on drawing and modelling. Joinery has as its particular aim to teach the manipulation of the plane and saw, and the various ways of fitting wood. Generally speaking, wood-work would be entirely in its proper place in our normal schools. Metal work, as it is carried on in Dresden, requires a great number of tools, fire, &c., which would render its introduction into educational establishments very difficult. Finally, basket-plaiting, veneering, and mosaics in wood, and the use of the lathe, constitute supplementary branches.

On Saturday, the 26th August, a general public meeting took place, in which the following principles were adopted: I. Instruction in manual work, which the leading educationalists have for ages past been desirous of introducing into the instruction of young people, completes the education of boys in a harmonious manner, and, while keeping constantly in view the purpose of education, bestows a very special attention upon the necessities of social life. II. The educational value of instruction in manual work consists particularly in this, that, first, it develops the creative faculty which the child has within him; secondly, it borrows a lively interest from its intuitional character, and thus augments the pupil's desire to learn, and helps him to understand easily and promptly the thing taught; thirdly, it assists powerfully in the formation of character; fourthly, it fits one for the accomplishment of the duties of social life. III. The character and aim of manual work should be the only guides in following this kind of instruction. IV. Instruction in manual work should have for its foundation the principles of Froebel's kindergarten, and should be continued during the whole of the school curriculum. It is desirable that boys should find opportunity to pursue these exercises even after leaving the primary school. V. In the primary and superior schools instruction in manual work may render great service to various other branches of instruction—notably drawing, geometry, geography, and natural philosophy. In boarding-schools, the teaching of manual work is indispensable as a means of education and instruction. VI. The organization of workshops for instruction in manual labour ought to be recognised as answering to an imperative necessity which is felt everywhere. VII. The introduction of this instruction into the normal training schools for teachers is desirable because of its importance in the primary schools.

What at first sight appears to us difficult—nay, even impossible—to perform, very often ends by seeming easy when reflection and a good will work together at it. Had we been shown at the commencement of the course the objects we ought to be able to make in six weeks' time we should probably have had little courage to set to work; when the course was ended we were astounded at our own achievements, and we asked ourselves how it was possible that our unpractised hands had been able in so short a time to acquire the faculty of making passably well the articles in question. Have we become artificers in all these trades of the elements of which we have but skimmed the surface? Far from that, no doubt. But we have at least learnt to use our hands, and we have gained the assurance that by practice we are able to construct a great many things that we should have judged ourselves incapable of making. We have seen by experi-

ence how able and useful a servant the hand may become when we are willing to give it regular exercise. We will follow the example of the pupils in the class at Emden, who have set themselves the task of making practical researches through all parts of Germany, showing them by experiment how far the system of Clauson Kaas is suited in the schools of the people.

In order to realise precisely the manner in which manual work is given to children, I have visited some schools where this instruction is put in practice. Thus at Dresden there exists a school of manual work attached to one of the communal schools of that town. The founding of this establishment is mainly due to Dr. Birch-Hirschfeld, who, in 1880, made a trip to Sweden and Norway, where, thanks to the kindness of M. Ahlborn, of Stockholm, and of MM. Abrahamson and Salomon, of Nääs, he had the opportunity of studying closely the schools of manual work for boys. The result was that the *Gemeinnützige Gesellschaft* of Leipsic opened on the 6th October, 1880, a school of work under the direction of Dr. Woldemar Götze, and that in the month of May, 1881, the *Gemeinnütziger Verein* inaugurated at Dresden a school for pasteboard-work and wood-work. But where was any one capable of teaching these things to be found? Four schoolmasters voluntarily undertook to go to a binder and a carpenter and make themselves conversant with the work. This school, however, was not opened for the benefit of poor children, for each child had to pay two marks (2fr. 50c.) a month, of which one mark and a half was for the teacher and half a mark for the materials. At the opening of the school forty-seven pupils were already enrolled; they were divided into five groups, each of which had two hours' work a week. Thirteen poor children were also allowed to share in the lessons gratuitously. To-day the school counts eighty-nine pupils arranged in eight sections. The objects made by these children attracted my attention particularly; they were for sport, for school, and for home use. I saw there benches, stilts, boxes, bootjacks, plant-stands, cameræ-obscuræ, almanacs, money-boxes, pen-cases, manuscript-books, and geometrical figures. All the articles made remain the property of the children.

This enterprise is a simple experiment designed to ascertain in what manner this school will answer the proposed end, and, above all, what would be the pernicious consequences that manual work might involve. The result, up to the present, is most favourable. The pupils attend their lessons with the greatest punctuality, work with zeal and application, and show once more that the desire to create, and to embody a thought in a tangible object, is innate in a child. The Dresden school does not desire that the knowledge acquired should serve as a preparation for any definite trade, nor that the articles manufactured should be exposed for sale. It sees in work only a means of exercising the eye, of giving skill and dexterity to the hand, of accustoming the child to perform all work carefully; of procuring for him, by the making of useful objects, a source of pleasure—in short, of inspiring him with love both for work and for the workman.

I was no less agreeably surprised when I visited the school of manual work belonging to M. Emile Von Schenckendorff, at Görlitz, in Silesia. This noble friend of the people was so impressed with the great educational importance of manual work, that he erected a most beautiful school at Görlitz, and contributed much towards a better knowledge of the true character of manual work not only by his writings, but also by the lectures he delivered in all parts of Germany. The direction of this school has been intrusted to M. Neumann, a student of the course at Emden. The school was opened on the 3rd of March, 1881, and commenced with sixty pupils separated into four groups. The first of these groups was made up of fifteen teachers, the three other groups were composed each of fifteen pupils of thirteen years of age, all pupils from the primary and middle schools in Görlitz. In the first year the school met with much opposition, but when people were convinced that it was in no way prejudicial to trade, they manifested a different disposition. The school is to-day attended by 120 scholars, who all receive gratuitously four hours' lessons a week. The expenses, including the salary of the four masters, do not exceed 1,800 marks a year. The school comprises only scholars from the upper classes of various schools in Görlitz. M. Von Schenckendorff has hopes, however, of ultimately extending his establishment to such a degree that children will come to be admitted there at eleven, ten, nine, eight, seven years of age, and to make manual work a sequel to the exercises of Froebel.

M. Von Schenckendorff has sought by preference occupations which demand little strength and few tools, and have at the same time great educational value, and he has found them in modelling, pasteboard-work, and wood-carving. The objection has been raised against him that modelling is impossible without a certain knowledge of drawing, to which he replies that he has seen in Sweden and Southern Germany little peasants who were modelling with great art without ever having learnt to draw. However that may be, I have been very much astonished to see the taste with which the pupils of the Görlitz school modelled pretty leaves without being great draughtsmen. For the rest, everything done in that school is simple but well executed. It is with good right that it has taken for its motto, "*Was du thust, thu' gut, thu' ganz.*" It is intended to add to the school materials some benches for carpentry.

What more am I to say of other schools I have visited? Here there is a wish for occupation in carpentry alone, there this kind of work is found to be beyond the strength of a child; in some schools only pupils who pay are admitted to the manual work, in others the desire is that poor children only should benefit by them. Everywhere, in short, we see the desire arising to take part in the solution of the problem of ascertaining whether manual work can be introduced into the school, and in what manner that introduction should take place.

The course at Dresden had been opened but a few days when the unfavourable sentence passed on manual work by the fourth General Assembly of German schoolmasters arrived from Cassel. The following is the motion adopted by this Assembly: "I. The meeting fully appreciates the attempts made—doubtless with good intentions—to establish schools of work, designed to make a larger number of children practical and active men, and thus to save them from a demoralising career. II. Nevertheless, whilst recognising the good intention of these attempts, it is important to insist on the following points: (*a.*) Instruction in manual work has not for our youth the same importance that must perhaps necessarily attach to it in the northern part of the country,

considering the particularly unfavourable situation of that district. (*b.*) The instruction given during six weeks to train professors cannot be regarded as sufficient, even when extended to a very much longer period, if this instruction is really to produce appreciable results; and for educational reasons we cannot commend the practice of allowing instruction to be given to scholars by men belonging to other professions. (*c.*) Our schools are places for study, workshops of intellectual labour; if they are to perform the great task that our age imposes upon them, the time is insufficient for them to be occupied with new branches of study which have a different aim. Moreover, the school, in its actual programme, takes largely into consideration the principle of harmonious development — notably in exercising the hands also. (*d.*) There are serious objections against devoting a greater number of hours to school work and to keeping children a much longer time from their homes. III. For these reasons it is not desirable that the school of manual work should be attached to the school properly so called. On the other hand, the introduction of instruction in manual work into districts where children are deprived of the supervision of their parents might be useful. For the rest, the responsibility of promoting the praiseworthy attempts of which we have just spoken must be left to private initiative. IV. With a view to develop German industry and to perfect manual work in Germany it is necessary above all to increase as much as possible the number of professional schools. V. The organization of schools for instruction in manual work requires a very considerable outlay. It is desirable that the school, properly so called, should first be so organized as to answer the requirements of our age, and that then, when that has been done, we should show something more than mere good will to a branch of study of less importance, and having a different object."

This judgment of the German schoolmasters rests, in my opinion, on prejudices with regard to a matter which well merited serious study before it was condemned in so formal a fashion. Instruction in manual work has, for the youth of every country, immense importance, though in certain countries, as in Sweden and Norway, it seems more particularly to answer to the requirements of practical life. Usually, when we hear manual work spoken of, we simply have in our minds the preparation for a definite trade or the training of skilful workmen. Such institutions surely have the right to exist—nay, they are indispensable. This, as we have already said at the commencement of this report, has been understood in France, in Germany, and in the Netherlands. It is to be hoped that Belgium may speedily see her great towns possess similar establishments where boys would complete their primary education by still receiving daily two or three hours' lessons, and would devote the rest of the day to technical work, which, besides, would make the labour of the hands more highly esteemed in an age when many parents think it the greatest happiness for their children if they find them a place in an office or train them for teachers. Perhaps we should then see a bright career opening to many a man who will have become a good artisan, but who is now only an inefficient teacher or a clerk without hope for the future. But let it not be forgotten that instruction in manual work in the primary school has an altogether different aim, which is to develop the dexterity of the hand, to exercise the eye, and to awaken the sentiment of the beautiful as well in the child of the poor as in the child of the rich; continuing the system of Froebel with a series of graduated exercises, it still designs to render aid to intellectual instruction in order to afford to young people a better preparation for social life.

The ministerial programme of the primary schools has partially foreseen this state of the case. The observation placed at the head of the chapter, "Geometrical forms, first degree," says, "The lessons, having for their aim the study of geometrical forms, will be essentially intuitive and practical; scientific demonstrations will be prohibited, and definitions will be very sparingly used. It will be sufficient if the pupils learn to recognise the forms, to grasp their relations, and to know how to reproduce them in drawing or by a process borrowed from Froebel's method." Here then we already have a continuation of Froebel's system in the primary school; the children learn not only to name the geometrical forms and to comprehend their relations, but they compare them by means of little sticks and card; they copy them in clay. By these means they learn to observe well, and accurate observation furnishes the intellect with matter for reflection.

The English educational authority, Spencer, has said, on the subject of primary instruction in geometry, "If the instruction is to continue attractive, and if, during the period of the development of children as in that of mankind generally, knowledge is regarded merely as a means of attaining practical skill, it is evident that the most rational preparation for the study of geometry is actually to be found in a system of exercises, in the course of which the child has to cut things out and to put them into shape, and to which geometry itself affords such powerful aid. Besides, nature undertakes to show us the way. Children, all of whom give evidence of possessing a strong disposition to reproduce what they see, have a tendency to cut out shapes and to make little designs, and this tendency, ably directed and encouraged, not only opens the way for scientific conceptions, but develops in most cases that skill of hand which is usually so little cultivated." What Spencer here says with regard to instruction in geometry is a general truth wherever the child is accustomed to observe and to act. Such instruction, based on intuition and individual labour, is eminently fitted to develop the intellect, to render the hand skilful, to produce the taste for the beautiful, and the love of work.

M. Germain, Director-General of Primary Instruction, in speaking in defence of instruction in drawing, said: "In order to draw, it is necessary to be attentive; it is necessary to observe well. Nothing is rarer than the man who observes well. To induce a man to see things properly—to grasp the harmony of them—is to give him a turn of mind which reacts most favourably on the culture of all his faculties." These words of incontestable truth may be applied still more justly to instruction in manual work; for the making of even the simplest object demands unremitting attention, and at the same time brings intellectual labour into operation.

Plaiting, as well as pasteboard work and modelling, would find a useful application in the primary school. Froebel sets children to plait with little strips of paper. Why not graduate this work by plaiting with cord, with straw, and finally with osier? Let us add to these exercises

wood-work for the upper classes, and let us ask in all sincerity whether, under such conditions, the primary school would not better answer its object than it has done hitherto. Our schools are places for study, workshops for intellectual labour, say our opponents; but, the question is not in the least settled whether the school ought to be exclusively occupied in intellectual development, and whether it is only by books that it should afford preparation for social life.

If we admit in principle that manual work would be of indisputable utility in the school, it still remains for us to ascertain whether its immediate and complete introduction into our Belgian schools would be expedient. In our opinion we should do better in this respect by following the example of neighbouring countries where this instruction is promoted as much as possible without the direct intervention of the State, and so to bring it to pass that it shall become a matter of custom without violently shocking received ideas. Above all, it is for philanthropic societies to take the thing in hand, and to erect workshops where a child would be able to practise several hours a week, so that he could be spared the sad trials of apprenticeship. It is above all on the population of our great towns that the duty rests of setting an example and of introducing this instruction, were it only into a few schools, to prove to those who are prejudiced against it that this work may find a place in every educational establishment. Moreover, the professional schools, the special object of which is to train good workmen, should receive our boys of from twelve to fifteen years of age, and should allow them the privilege of intellectual and technical instruction at once. This, at the same time, would be the best means of retaining the child the longest possible time at school and of placing him in an apprenticeship as late as may be; two very suitable methods of raising the moral and intellectual level of the masses of our people.

As we have already said, the general State regulation for normal schools and for primary normal sections, contains the following proviso: "A workshop for manual labour will be established in every normal school for the training of teachers. The scholars will there practise, during certain hours of recreation, the setting-up of simple and easy apparatus for the demonstration of instruction in the primary schools. . . . . Manual work is conducted during leisure time—namely, two hours a week for pupils of the first two years of study and one hour for the rest."

Manual work has, then, in point of fact, its appointed place in our normal schools, and, what is more, this instruction is obligatory there. The pupils who are now attending the normal school classes will constitute, therefore, in two or three years' time, the vanguard of a staff capable of giving practical instruction in manual work, and who, I am convinced, will hold manual work in high esteem. This introduction possesses still another peculiar advantage for the normal school students themselves, for it cannot be denied that, for those whose intellectual faculties alone are in operation, bodily exercises are a happy counterpoise to this protracted mental strain. They will therefore find in manual exercises a useful and healthy gymnastic for body and mind.

The objection will perhaps be raised that the pupils of the normal schools already have so much to do that it would be cruel to rob them of two hours more of their leisure. Let us not make a mistake; manual work possesses so many attractions for the young people who are occupied with it that they will regard the hours spent in the workshop as the pleasantest of their pastimes. I have myself had proof of this in the normal school at Brussels. Last summer I gave the second-year pupils of that establishment a course of pasteboard-work and carpentry. The lessons were given on Saturdays, between the hours of 1 and 3 o'clock in the afternoon; that is to say, during the only half-holiday. They were left entirely at their own will to attend or not at these lessons, and, in spite of that, I had but one absence to record from the 1st of April to the 6th of July.

Instruction in manual work in the normal schools cannot, however, be left to chance. To yield fruit it must be conducted under the direction of an able and devoted professor, and should consist of a series of graduated and useful exercises. The pupil should never rest content with work that is badly done or unfinished. As soon as disorder begins to get the upper hand in the workshop, the instruction ceases to bear any fruit. Finally, every pupil ought to have an idea of the quantity and of the value of the materials consumed during a certain period, and to render an account of the use he has made of them.

When the pupils in the normal schools shall have practised regularly two hours a week for their first two years, they will be able, during their third year, to dispense with assistance, and even to render aid to the younger scholars.

In normal schools where the means of establishing a workshop are completely wanting, it should not be forgotten that many occupations, such as pasteboard-work, and wood-cutting, and carving, may easily be carried on in an ordinary class-room or in the play-room. Efficient organization of this instruction, therefore, need meet with no serious obstacle. Even in the girls' normal schools such occupations as pasteboard-work, plaiting, and modelling would be thoroughly in their right place.

But, then, it still remains to find men capable of giving instruction in manual work. It is evident that, in a few years' time, a large number of young teachers will be able to undertake these lessons. For the present, the best example to follow will be that which has been employed so successfully in neighbouring countries—the organization, namely, of temporary courses. The different tools necessary for a course of this kind might then easily be employed in the normal schools of the country.

We conclude with these words of M. Hermann Pergameni: "The study of manual arts is not only useful to those who will by-and-by have to live on the work of their hands, but it is of general interest, since it contributes to produce equilibrium with intellectual toil, and happily supplements the work of gymnastics. In fine, it familiarises children with the various domains of human activity, and it is capable of becoming a precious source of recreation and of enjoyment."

No. 22.

REPORT on the Present State of MANUAL INSTRUCTION in GERMANY, drawn up for the Education Department of the Colony of New Zealand, by Dr. WOLDEMAR GÖTZE, Master of the Real-gymnasium and Director of the Pupils' Workshop in Leipsic.

Bilde das Auge, übe die Hand,
Fest wird der Wille, scharf der Verstand.

SIR,—

At the request of Mr. Guise Larnach, now residing in Leipsic, to furnish some account of German manual instruction to be of use in promoting the interests of technical education in the public schools of New Zealand, I shall endeavour in the following sketch to submit to the appreciation of the Government such observations and experience as I have been able to make during the whole course of this educational movement, extending over a period of five years and a half, during which time I have taken an active part in its theoretical and practical development.

The movement, which at present occupies in so eminent a degree the attention of educationists in Germany, Austria, France, Holland, Belgium, Switzerland, Denmark, Sweden, Norway, and Russia (particularly the Baltic provinces and Finland), is originally due to two principal causes, a pedagogical and an industrial.

Attempts to reform one-sided theoretical instruction, destined to inculcate knowledge exclusively by mental processes, are by no means modern: in Germany they date from the time of the Reformation. Martin Luther, the founder of German Protestantism and of the German system of popular education, was himself busily occupied during his leisure hours with a practical trade, as, for instance, turning; and in his famous letter to the Mayor and Town Councillors of every town in the German Empire he lays particular stress on the view that schools are not to be considered from a mere theoretical standpoint, but as establishments destined to educate for practical life, and he distinctly requires that children should be taught not only the knowledge and learning of the day, but likewise such descriptions of handicraft as may be of use to them at home in the family, in the community, or in the State. But it was the realistic pedagogy of the seventeenth century that first acknowledged manual labour to be an educational element in its system. Comenius (1592–1656), especially, is known for having drawn particular attention to manual training as a potent educational factor. "Schools," he says, "are to be workshops teeming with labour." He states that on psychological grounds the occupation with things must take precedence of that with words (verbalism), and therefore recommends the substitution of demonstrative instruction for mere verbal instruction. He desires, above all, to have the faculties of sense in children duly exercised, and, remembering the adage *mens sana in corpore sano*, to provide recreation from study in the form of games and bodily exercise. He finally caught up the idea already broached by Luther that ordinary school instruction is to be supplemented by training in some manual department. And all this Comenius wishes to see introduced not only in elementary schools, but also in the higher schools and academies the hand, as well as the head and the heart, are to be cultivated. He expressly hopes that in time the public schools may send forth young men active and ready, clever and diligent, to whom in after-life any business whatever may be confidently intrusted.

At a later period the principle of giving the school a more practical turn was firmly represented and powerfully upheld by the English philosopher John Locke, in his work, "Thoughts on Education," published in 1693. In these essays Locke eloquently pleads for the introduction of the manual element into the educational system, as it greatly contributes to the recreation of mind and body, not to mention the salutary influence which technical occupations must exercise on the skill and natural aptitudes of the pupil. He finally refers to the circumstance that labour, while preserving us from idleness, its temptations and evil consequences, is eminently qualified to promote moral education. After Locke we find Jean-Jacques Rousseau, in his celebrated work "Émile, ou de l'Éducation," advocating the introduction of manual instruction into schools, and pronouncing it indispensable to all sound instruction. "Unquestionably," he says, "we form of things which we learn in this manner [*i.e.*, practically] a more clear and vivid conception than of those which are conveyed to our minds by mere verbal communication." He compares the mind which, instead of thinking and devising for itself, is always influenced from without, with the body of a man who is always dressed from head to foot and served by others, and drawn by his horses, till he finally loses the free and easy use of his limbs. "If," says Rousseau, "instead of chaining a child to books, I employ him in a workshop, his hands are occupied for the benefit of his mind; an hour's work will teach him more useful knowledge than he can learn from books and oral explanations in a day." Skilled manual labour is, therefore, according to Rousseau, not only of importance as a practical preparation for the future career of the pupil, but also a most valuable means of developing the mental powers.

Manual instruction was first systematically given in Germany by Christian Gotthelf Salzmann, in the celebrated educational establishment founded by him at Schnepfenthal, in Thuringia. "I believe," he says, "that to acquire a sound education children must be placed in a position to do real effective labour; . . . for are we not all endowed with bodily functions? Why should we then by negligence allow them to grow rusty? Are not the most precious implements of man his hands, and are we to suppose that the mind will be able to develop its noblest faculties if its best instruments, the hands, are allowed to grow awkward and useless? Where is the man, however rich or noble, who may not one day be obliged to earn his bread by the work of his own hands?' In his famous "Book of Ants" he refers in the following terms to the practical manual labour of children: "The making for themselves first of all manner of playthings and toys, and afterwards of really useful tools and objects, is such a profitable and agreeable occupation that in all educational establishments where children are to be properly educated I consider it an indispensable requirement to afford them opportunities of learning how to perform manual labour. In the first place, their natural desire of activity is gratified, and all extravagant forms of youthful

exuberance are stifled in advance. Secondly, children are very fond of making little things, and are rejoiced when they see how by little and little they approach and finally attain the goal they had proposed to themselves. See! now they have got their little boat or ship ready, at which they have been working for some time! now it is launched and hurried down to the rivulet on which it is to sail to the hearts' delight of the little ones! You should have seen that with your own eyes, my dear friends, to be convinced how extremely important it is to procure children an opportunity of doing something for themselves. Thirdly, the various faculties of body and mind are thereby brought into operation. The mind, which, in the ordinary course of instruction, is always trained to act according to the precepts and manner of thinking of others, is here permitted to work for itself, to form independent ideas of things, and to devise means of putting them into execution. The eye is trained to compare magnitudes, and to determine the exact proportions of the different parts of the work to be executed. The muscles of the hands are exercised in such manifold degrees that in the incidents and difficulties of after-life they will be able to act for themselves, without the necessity of recurring to foreign assistance. A man who, in his youth, has not acquired some skill in manual labour is only half a man, because he is continually dependent on other people."

But I do not purpose here to write the history of manual training, and shall only mention two important pamphlets lately published in Germany: Rissmann, "Geschichte des Arbeitsunterrichts" (Gotha, 1882); and Johannes Meyer, "Die Geschichtliche Entwickelung des Handfertigkeitsunterrichts" (Berlin, 1883). What I wanted to prove was that the idea of educating children by manual instruction is old, and by no means a suggestion of modern pedagogy. He who is at all acquainted with the history of education is aware that the desire of engaging the activity and practical tastes of the child in the service of popular education turns up at every page, and that the problem will most probably not again disappear from the forum of public discussion until it is definitely solved. In Germany, particularly, we find from the very commencement a disharmony between the purely theoretical system, which makes the acquisition of mental knowledge its principal aim, completely ignoring the practical talents of man, and the realistic method which points out this defect, affirming the necessity of taking into account the practical side of human nature in educational matters. The call for a reform grew daily louder and louder; the old pedagogical gear continued to move in its accustomed grooves; but the hope seems to be justified that now at last the judgment will prevail that a thorough harmonious education of man is impossible without a judicious training of the eye and hand. The good idea will not again so easily sink into oblivion, because in the first place a great number of enthusiastic educationists have taken the matter in hand, and then because the movement is not confined to one country alone, but, perhaps in consequence of the facilities of international communication, has taken root in almost all civilised countries. In France manual instruction is rendered obligatory in all elementary schools; in Norway Parliament is legislating on its compulsory introduction; in Sweden it is voluntary in 700 schools, and the Government gives pecuniary aid to every school affording instruction in skilled labour. Belgium, Holland, North America, Denmark, Russia, Switzerland, the Austro-Hungarian Empire, are making rapid progress; also England, Italy, and Spain have taken the subject into consideration; even in Africa (Blidah, in Algiers) a manual training-school has been opened; and in Japan the Government has decided on establishing a course of manual instruction in the Teachers' Training College at Tokio. But it is in Germany that the movement has been most vigorously promoted and presents the most interesting features—teachers, artisans, tradesmen, economists, &c., discuss the matter in the press, in pamphlets, at congresses and meetings: in short, interest is universally awakened, and what constitutes a material difference from all former agitation is the fact that now the practical realisation of the idea is placed in the foreground. Thus it is hoped that the broad dissemination it has found in different countries will preserve it from ever again lapsing into oblivion.

There is another important circumstance which, in comparison with former exertions, is well calculated to render the cause of technical education victorious. It must be remembered that the subject is to be considered not only from a pedagogical, but also from an industrial or economical point of view. At the Universal Exhibition of Vienna, in the year 1873, the Germans and Austrians made the painful discovery that in industry and art they had been considerably outstripped by other peoples of Europe, and that renewed exertions were absolutely indispensable should they further compete with advanced industrial nations. Industrial schools were now founded for the different branches of trade: but it soon became evident that the pupils sent to such schools were already too much spoiled to pursue with advantage any instruction in their calling; they could neither see nor feel, and were in every sense awkward and unpractical. An eminent judge of the state of Austrian industry once told me that all the vast exertions that were being made to raise the level of Austrian art, and especially of industrial art, would be of no avail as long as the pupils were not better prepared in the elementary schools—manual training in the elementary schools must form the broad basis on which improvement in art and industry is to be firmly established. Austrian industry, formerly so renowned, would be no longer fit to compete in the market of nations unless all crude learning and dead knowledge were retrenched in favour of sound practical experience. Nor have we in Germany been more favourably situated. There prevailed for a long time among our people too high an estimation of the importance of the learned professions, and a sentiment bordering on contempt with regard to the different branches of handicraft. Capital, devoted to manufacturing on a large scale, had crippled the simple artisan, no longer able to compete with machine power; prices went down to such a degree that Professor Reuleaux, Commissary-General of the German Empire at the Exhibition of Philadelphia in 1876, was obliged to characterize all German productions exhibited as "cheap and bad," throwing a very significant light on the state of our industry. By this failure it became at once manifest that our trade had lamentably descended from the proud height it occupied during the Middle Ages. Reuleaux showed that not only were German productions cheap and bad, but also that German art and design were in a deplorably backward state. The reasons for this lamentable state of things soon became apparent: the struggle between wholesale manufacture and handicraft, in which the latter must sooner or

later succumb; the sudden introduction of liberty of trade, pulling down at once all the safeguards imposed by the guilds; the increased competition arising from over-population, leading to an abnormal depression of prices, and rendering solid workmanship and skill a thing of impossibility. Add to this the ignorance or indifference of the public, which, with the defective schooling it had gone through, was not able to appreciate the value of solid work, and cared only for the cheapness of the article. Finally we must not forget the state of industrial apprenticeship, which soon became the subject of angry discussion and bitter complaint. The higher classes never allowed their sons to choose a trade, for manual labour was despised; the learned professions were over-run; officials—nay, simple copyists—looked down with disdain on the honest tradesman, whose ranks were recruited only from the poorer classes, who very often preferred to send their children to the factory, where they underwent no kind of apprenticeship, and were accustomed from the beginning to be satisfied with scanty wages. The masters sorely complained of the awkwardness of their apprentices, who, for all purposes of the workshop, had hands which they could not use and eyes with which they could not see. They were possessed of a lot of half-digested knowledge crammed into them, but were not able to turn the least part of it to any practical advantage. On the other hand the masters were reproached with neglecting the instruction of their apprentices, uselessly squandering the labour intrusted to them on the merest drudgery, such as turning wheels, going on errands, and doing the business of domestics. Thus we shall not be surprised that a generation of tradesmen grew up not able to compete with those in other countries who had received a better training. And such useless apprentices came from schools whose budgets swallowed up yearly heavy sums of money, whose course of instruction aimed at high results, so high, indeed, that mental overpressure and bodily enervation were the natural consequences, which in turn give rise to the different school diseases, especially to the increase of shortsightedness.

In the face of such facts no time was to be lost in retracing our steps, and in devising some means of retrieving the position we had lost. It is now patent to every thinking person that the old system of manual trade is doomed to perish. The simple artisan must at last give up the struggle against machinery. He will never be able to cope with the extensive production of powerful machines and technical appliances of modern invention. This is to be regretted, but we fear there is no remedy. The future field of the skilled artisan will be industrial art. Take, for instance, book-binding: the machine produces the covers for a large popular edition, whereas the skilled book-binder will find remunerative employment in the production of ornamental binding, where gilding is highly valued; he can make himself master of the most modern patterns of artistic binding, pressing, and leather-plastic, things that can never be so tastefully turned out by the machine. Wherever, therefore, mechanical work is to be performed, machinery will prevail over man: he must consequently elevate and ennoble his trade by infusing into it principles of artistic taste; he must produce something bearing the stamp of individuality; he must transfer his activity to a field where he has nothing to fear from machinery. This revolution cannot be accomplished without the assistance of manual instruction. Schools of all kinds must take into account the practical side of education; the eye must be educated to the laws of beauty; the higher classes must cultivate a taste for the models of art, and must learn to appreciate beauty of form in industrial productions. Also, tradesmen must be initiated into the laws of art; they must receive such an education as will develop their individuality in whatever branch they choose to work. But, as we have already seen in the case of Austria, this cannot be effected by erecting at once special schools of industry and leaving the other public and private schools to operate on the lines hitherto pursued; the great reform can be carried out solely on the broad basis of popular education—the elementary school. Here it is that children must learn to use their eyes and hands; here it is that their sense of form and beauty must be awakened and developed, and they themselves imbued with a love of labour. Only when this reform is realised may it be said that the industrial schools no longer hang in the air, but rest on solid groundwork.

Since, then, as has already been mentioned, the call for manual instruction in order to render the education of the child as full and as harmonious as possible, the ideal wishes of the educationist and the wants of industry happily coincided. The pedagogical movement of reform has therefore at last received its most valuable support in the claim made on the school by practical life, that it shall take into serious consideration the training of the hands and eyes of its pupils; and it may be safely predicted that this will not now remain unheeded. The fact of the movement being taken up and zealously promoted by several countries will maintain a healthy rivalry, which will not allow a relapse into indifference. France, fully recognising the importance of manual training, made it compulsory by the Bill voted on the 28th March, 1882. In order to give some idea of the high appreciation entertained by the Government and people in France of this new element of education I beg to quote a few passages from a speech delivered at Vierzon by M. Jules Ferry, Minister of Public Instruction, in May, 1883, at the opening of the national school for higher elementary and manual instruction. The Minister said: "In order that the nobility of manual labour may be acknowledged, not only by those who are occupied therewith, but also by society at large, we have chosen the surest and most efficient method—we have made it part and parcel of a sound general education. Remember that when the plane and the file occupy a place of honour side by side with the compasses, maps, and school history, when they become subjects of systematical and intellectual instruction, then many old social prejudices will die out, the spirit of caste will disappear, social peace will ascend from the benches of the elementary school, and Concord, with her soft beaming influence, will lighten up the future of French society. The manual instruction imparted here is professedly not intended to be a special education for any particular trade; it will be manual instruction without any specific application; it will teach the fundamental principles which govern the laws of all work; it will comprise all knowledge necessary for working in wood and iron. In the three years from twelve to fifteen years of age, during which the children of Vierzon shall frequent this establishment, they will be thoroughly educated in the two chief departments of manual labour—namely, metal- and wood-work. That is, gentlemen, what I had to say about the character and

practical aim of this new school. I do not hesitate to declare that it is one of the most popular works that can be executed at the present time, and I beg to add that it is a work eminently national. We shall by degrees succeed in organizing this description of instruction to suit ourselves, for we are powerfully assisted by the strong impulse of public opinion. Now, with reference to the development of this movement, there are a few statistical facts which I wish to make known to you in passing. Manual instruction is imparted in many other places in France to a less degree and at less expense than in our establishment of Vierzon. No fewer than four hundred villages and towns possess schools in which the idea of manual training is practically carried out; and all this since when, gentlemen? Since 1879. In 1879 there were forty work-schools which owed their existence more or less accidentally to the good-will of the municipal authorities, as a concession to public requests; and since 1879, without any other action on our part than tendering the hand to the expressed wishes of the communities, more than four hundred have been established on French soil. Finally, I wish to say that the matter involves a question of vast economical interest. To be sure France is a great laborious nation; she has won great victories in the peaceful domain of free European competition. But it is evident to all who look a little farther into the future that, as on other fields of battle, we must not repose on our laurels. We have here in Europe, round about us, at our gates, across the ocean, very dangerous competitors in fields of skilled labour. The articles we import from them, the reports furnished to us, and above all the sharp competition we meet with on all foreign markets, must serve as a warning by no means to be neglected. Yes, on the industrial as well as on other fields of battle a nation may fall and decay; on both, surprisals are not impossible. By exaggerated confidence, self-admiration, indolence on the part of the public powers, it may come to pass that we lose a superiority which has hitherto been incontestable. From this great danger our country must be protected by the spread of technical education. There is no more vital national interest, and I may here say and repeat, without fear of contradiction, it is time to set up again the workshop, that is to say, to regenerate our native country."

The practical North Americans attach a most lively interest to the phases of this movement; technical instruction is given in the elementary schools of Boston. On my writing-desk I find an American publication entitled "The Manual Element in Education," by John D. Runkle, Ph.D., reprinted from the forty-fifth annual report of the Secretary of the Massachusetts Board of Education (Boston, 1882), in which the necessity of introducing industrial instruction into all schools, public and private, is ably demonstrated. The author writes as follows: "It is hardly worth while in this connection to consider how this element is to find its place in our educational system. Individual opinion may for a time have some influence in directing the current of thought upon this subject; but in the end the needs of the public will control. There is already a wide-felt impression, if not conviction, that something of the kind is necessary; and this conviction is most likely to find expression at first in special mechanic-art schools, in centres where the need is most felt. If these schools shall demonstrate their value, not only as training-schools for fitting students to enter upon certain lines of industrial activity, but also as schools for furnishing the needed mental discipline, then it seems reasonable to suppose that this element will become more general, and just in proportion to the value in which it is held by the educated and thinking public. The methods of teaching the manual element will become better settled through a larger experience, and there will not be the present lack of teachers properly trained for this kind of education. The revolution in the methods of teaching the physical and natural sciences now practically completed in the laboratory method, or the method of investigation as it may be properly called, is recognised, not only as the best for the acquisition of the required knowledge, but also as best for the discipline it imparts; and in the same way the laboratory method of teaching the mechanic arts will gradually take its place as a practical, and at the same time a disciplinary, element in education. It is but a few years since the idea of introducing drawing into our schools as an element of general education seemed visionary, and yet to-day it is an accomplished fact in many parts of our country, and has been for a much longer time in many countries abroad. Drawing is now regarded by many educators as an established factor in elementary education, and destined to work its way into all classes of public schools. It was only after it was plainly seen that there is a wide distinction to be made between drawing as an art and the drawing which pertains to a specific industry of which the former can be considered only in the light of the most general preparation, that the art began to be regarded as a possible fundamental factor in a common education."

I should like to add that it has been the same with drawing as it will be in future with manual instruction. In another place Dr. Runkle gives his opinion of the influence of the new branch of education in reference to the condition of trade, in the following words: "But the change is gradually taking place in all countries, and all are preparing to meet it through some form of education. England, as is well known, has, during the past twenty-five years, by the introduction of a general system of elementary education, including drawing, and through special technical schools and museums, revolutionised many of her industries, particularly those involving artistic taste in design as well as excellence in manufacture. But in practical education in the mechanic arts, so far as I am aware, nothing has been done in England. In this direction France has long taken the lead, and has in the last few years awakened anew to the importance of the subject. The introduction of the mechanic-art method of teaching, and the influence which this method is having in modifying the details of instruction in the various trade-schools, constitutes a new era in technical education in France. Austria is quite as rapidly, if not more so than any other country, substituting systematic mechanic-art instruction in place of the old apprenticeship system; and, if she shall adhere to her present course, it is not difficult to foresee that in a few years she will rank among the leading industrial countries of Europe."

While writing this report I have received a pamphlet containing the welcome news that in Austria they have decided to found the universal work-school. The title of this pamphlet is "The Austria Universal Work-school," by Heinrich, Count of Attems (Graz, 1885).

Also England is on the best way of adopting the new system of elementary education. Miss Warren, who visited Sweden in the year 1884 in order to gather information on the state of technical instruction in the schools of that country, delivered, on her return, several lectures on the principles of the system which excited considerable interest in the London School Board. Mr. Pearson, an influential member of the Board, published a long report on the subject in the *Times* of the 13th November, 1884. (On French industrial training compare H. Leneveux: "Le Travail Manuel en France," Paris. Corbon: "Enseignement Professionnel," Paris. G. Salicis: "De l'Enseignement Primaire et Apprentissage," Paris. In Belgium, the following works have been published: M. T. Heyvaert, Gouverneur de la Province Brabant: "Enseignement Professionnel Primaire," Bruxelles, 1883. Van Kalken: "L'Enseignement des Travaux Manuels pour Garçons," Bruxelles, 1883. M. A. Sluys: "L'Enseignement des Travaux Manuels: Rapport presenté à Monsieur le Ministre de l'Instruction Publique," Bruxelles, 1884. In Sweden, Palmgren: "Sur l'Importance du Travail Manuel dans l'Éducation," Stockholm, 1882. Palmgren: "École Pratique de Travail pour l'Enfance et la Jeunesse," Stockholm, 1882. Salomon: "Stajdskolon och Folkskolon," Göteborg, 1882. Salomon: "Handfertigkeitsschule und Volksschule, übersetzt und bearbeitet v. Gärtig," Leipzig, 1883.)

Thus, I believe I am justified in the opinion that the movement for a form of elementary education in Germany in the industrial direction will not this time prove abortive, as both pedagogical and important national interests, the future of German industry and our ability of competing on foreign markets, are at stake. Our latest ally in this struggle for a reform is to be greeted in the German colonial movement. When the present territorial seclusion and restraint of the German Empire has ceased to exist, when the political horizon of our people expands across the ocean, we shall be better able to appreciate a system destined to unfold the physical and mental energies of man. Then it will be necessary to send forth not only men endowed with abstract knowledge, but clever and skilful men, knowing their own minds and able and ready to carry out their views. To obtain this end, practical organized work must be made an element of education. But a teacher who has at heart the welfare of popular education may ask, How? Is the industrial struggle then to be decided at once on the grounds of the elementary school? If children are to be there trained up to artisans, can such an establishment still claim the character of a place of common education? In answer to such questions, it must once for all be borne in mind that school-work is introduced not to learn any special trade, and is based on the general principles of education; that the major part of all who countenance the movement do so exclusively from an educational point of view, considering it in the light of a system destined to promote the harmonious education of the whole man. I, myself, should curse the day I put my shoulder to the wheel of this movement if I forgot for a moment the chief object of all education: I consider it essential that, in taking technical instruction into its programme, the school should do so only in conformity with the general ends of all education. The school is not to be adapted to the necessities and requirements of industrial instruction, but on the contrary industrial instruction must be subordinate to and regulated by the general work of the school. Is it, I ask, the immediate object of historical instruction to train up historians and professors of history, or is it not rather to cultivate a sense and taste for history, and teach the pupil to form just conceptions of historical events? The object of drawing is not so much to send forth artists and painters as to teach children to see aright, and to reproduce not only in words, but also in design, the forms of the tangible world about them. Children also learn gymnastics, not for the purpose of becoming professional acrobats or circus clowns, but for the harmonious development and strengthening of the body and limbs. Precisely in the same manner industrial education does not purpose to train up qualified artisans and tradesmen, but to inculcate the fundamental rules of practical labour, and the use of the most elementary tools, as for instance: hammer, pincers, vice, plane, and saw.

I completely agree with Dr. Runkle when he says: "Special technical schools confessedly for the children of the poor would inevitably become caste schools; but a general technical training in some of the manual arts, including drawing, required of all during the proper period, occupying only a few hours per week, say from the age of twelve to sixteen, and before the student has sufficient mental maturity to work successfully in a scientific laboratory, would have an entirely opposite effect, and be at the same time an excellent preparation for industrial pursuits or for further study, no matter in what direction; for whatever subject cultivates care, close observation, exactness, patience, and method, must be a valuable training and preparation for all studies and pursuits."

That the question is not one of training up pupils for special industrial branches, but of preparing them thoroughly for their future career, whatever it may be, will be made plain by the following extracts from Runkle: "We sometimes see a formal argument made to prove the obvious proposition that an educated man makes a better mechanic than an uneducated man, and it is hence inferred that our public-school system, in many ways so admirable, and the result of so many years of labour and experience, is all that can be desired, and that any suggestion of a modification which may the better adapt it to the future needs of the large proportion whose education is finished even in the grammar-schools is in the nature of an attack upon the system. But this is by no means the case. The quality of the education may be of the very best, and yet the question may be asked, whether an education based mainly on scholastic studies, with so much drawing and science as time will allow, is the best course for the largest number of pupils. It is sometimes thought that the reason why so many graduates of high schools seek positions as clerks, book-keepers, and other light forms of labour, is because these positions are thought more genteel than pursuits involving manual labour. This may be true to some extent; but I apprehend that quite as frequently the graduate asks himself, What can I do? What has my education fitted me to do? There is but one answer, and he acts accordingly as he ought; for, even if he wished to follow some trade or industrial pursuit needing special technical knowledge, he may not be able to devote the time and money necessary even if the conditions of apprenticeship were favourable. Suppose now that the same student had the opportunity during the school course, say till eighteen

years of age, to go through a well-arranged series of mechanic-art shops, under competent instructors: what are the chances that upon graduation he would not enter upon that pursuit for which he felt himself best fitted, and which held out the best prospects, not only for the pressing present, but for the future? That a course of education forms habits as well as tastes is obvious, and it is unreasonable to expect that pupils educated almost exclusively through one set of closely-allied subjects should show a partiality for pursuits with which these subjects have only the most remote if any connection. American boys and girls are not peculiar in this respect. The same tendency is noticed and complained of abroad, when, in fact, it ought to be expected. What, then, is to be done? Will anything short of educating the hands and head together answer? As the State cannot afford not to educate its children, it cannot afford not to so educate them as to make them the most serviceable to the State as producers and citizens."

In Germany—unlike Sweden, where industrial instruction is completely isolated from the other general branches of learning—we demand an *organic* assimilation, a thorough connection with the general system, so as to produce a solid indissoluble whole. I shall advert later on to this idea—the concentration and assimilation of instruction—when I have done with the origin and development of the movement.

There is not the least doubt but that the first impulse did not proceed from Germany, but from Denmark, where the movement assumed a character different from ours: it was rather economical than pedagogical. It was desired, during the long winter evenings, to draw off the rural population from habits of indolence and from the publichouse, by which the peasants were morally and economically ruined. Gambling and drinking were to be put down by inducing and encouraging the people to occupy themselves at home with some useful trade, and thus to learn to appreciate the comforts and amenities of domestic life; and, while enjoying the blessings of industry and economy, to curb their passions and inordinate instincts. To further this purpose an agitation was set up throughout the country; a propaganda was instituted for the so-called "domestic industry." The General Danish Home Industrial Society was founded in Copenhagen, in 1873, to regulate and control the various branches scattered over the country. But it soon became evident that the strongest lever in the propagation of domestic industry would be the elementary school, for the youthful generation would be more amenable to practical and useful occupation than those long since addicted to gambling and drinking; it was easier to educate the young to diligent labour than to charge the habits of the old. The school was also in this instance the hope and guarantee of the future. Hand in hand with the agitation for home industry proceeded the agitation for work-schools, and it was in this dual form that the movement made its way from Denmark to Germany, from Copenhagen to Bremen, and thence to Leipsic.

Here it will be necessary to trace the steps that have been taken in the introduction of mechanical instruction in Leipsic, because in this manner I am persuaded that the progress of the movement in Germany will be best understood. Our commencement was of the most modest description, and the Leipsic school takes the lead perhaps of all similar establishments in Germany. I am fully convinced that, wherever manual instruction is to be introduced, it must be carried out on lines analogous to those adopted in Leipsic; for this reason I beg to give a *résumé* of the experience we have gained in connection with the subject. For the 18th November, 1879, a lecture on self-occupation and domestic industry was announced to be delivered before the Utilitarian Society (Gemeinnützige Gesellschaft) of Leipsic by Mr. Lammers, of Bremen, who by personal experience was acquainted with the Danish movement. (See Report of the Proceedings of the Gemeinnützige Gesellschaft, 1881. Appendix I.) Having, from my time of apprenticeship as engineer, and from my studies at the Polytechnical School of Dresden, taken a lively interest in all questions of utilitarian import, and having during my residence at the University of Leipsic given instruction in the training seminary of the late celebrated Professor Dr. Ziller; having besides, on leaving the University, as family tutor, frequent opportunity of imparting technical instruction, I very naturally took a special interest in the coming lecture. In the lively discussion which followed I was induced to participate by communicating to the meeting my experience on the matter. It was at last decided to take the question into earnest consideration: a committee of eight members was elected, to be intrusted with the practical execution of the project. As chairman of this committee I had ample opportunity of studying the subject of manual education in all its bearings. On the 27th January I made a report of our transactions to the society, and laid before it the decisions arrived at by the committee. They were unanimously accepted, the society granting at the same time the means of founding a school and workshop for manual instruction. I was charged with the organization, and, in order to direct the interest of the public in general to the matter, I published an *exposé* of the lines on which the organization was to be carried out. This paper appeared under the title of "Supplementary School Education by means of Practical Manual Training." Leipsic, 1880. (Appendix II.) In it is to be found all that can be said *pro* and *con* on the subject of technical instruction in schools. It is, as it were, the programme of the activity displayed during the last five years by hundreds of pupils and more than a hundred teachers, distinctly showing the difference between the German and Danish methods. From the very beginning we took particular care to exclude all tendencies to special industrial purposes. The end we strove to finally attain was the amalgamation of manual instruction with the general instruction of our public schools. Thereby we hoped to create a counterpoise which would be supplementary to exclusively theoretical training; and for this reason such practical occupation was preferred as stood in some connection with the public schools. We could not but admit that a mere mechanical imitation of the Danish scheme of house-industry would bear no fruit under conditions so essentially different; and our doubts have been corroborated by experience, for no establishments founded on the Danish principle have been able to hold their ground in this country. Our winters are not so long, and even during the cold season the peasant does not altogether cease agricultural labour; he does not live in such a state of isolation as the peasant in the thinly-scattered farmhouses of the north. For a moderate price our peasants are able to buy better and more elegant appliances than they

could produce by their own crude industry. Besides, we should materially injure our industry by extensive home-production, thus exciting the enmity of a whole army of tradesmen and artists. We therefore decided on devoting our exertions to the purely educational side of the question. Our system of public schools had a defect which we wished to remedy. It strives, we think erroneously, to educate by theoretical instruction, by an accumulation of purely mental knowledge; it makes no attempt to turn knowledge into practice; it does not form a strong moral will, nor does it produce a firm distinctive character. We are persuaded that nothing but a well-regulated system of industrial instruction will counteract these defects. Such instruction, however, is to be considered much in the same light as demonstrative and illustrative instruction with reference to geography, mathematics, physics, and drawing. What these branches teach theoretically must be practically tested by manual instruction, and therefore the problems to be solved must be borrowed as much as possible from general school-instruction. And, indeed, there will be no want of such occupation, as the points of contact between school and workshop are not few, and may be very easily multiplied. The young botanist has to manipulate pasteboard in the construction of his herbarium, and the mineralogist gives proofs of his skill in the modelling of the fundamental systems of crystallization in pasteboard or wire. The geographer moulds in clay the elementary ideas of physical geography, representing the courses of rivers, ranges of mountains, watersheds, the form and character of volcanoes, &c. Physics would seem to invite to the modelling of simple apparatus—lever, pulley, inclined plane, camera obscura, &c.; and also mathematics presents a wide field of activity for technical instruction. (A book has just been published, in which the relations between the scientific instruction and the practical occupation of pupils are ably discussed. Beyer: "Natural Science in our Public Schools, with Advice as to School-excursions, School-gardens, School-workshop, and School-laboratory." Leipsic, 1885.)

Thus we have ample opportunity of exercising the skill and talents of schoolboys, of forming their practical tastes, while at the same time we serve the cause of education in making the pupil fully master of his subject; for what we do not fully comprehend we can never turn to practical account. The pupil's experience in the workshop is the best test of his powers of comprehension: in this sense technical instruction may be considered as a higher order of demonstrative instruction. Light forms of work, such as toys and instruments for the boy's own use, presents for his relations, small house-gear, &c., are not wholly excluded from the workshop. But what we have systematically excluded from our programme is all trade production or work demanding pecuniary remuneration, our only object being to train up a generation full of mental and bodily power, and richly endowed with energy of will. That was the substance of my programme of instruction, and the problem of its practical execution was now to be vigorously taken in hand. In the first place we had to consider who were to be the instructors in our work-school. Were they to be clever artisans, possessing aptitude for teaching, or school-teachers who had been previously thoroughly trained to give instruction in manual schools? We decided for the latter, being of opinion that a tradesman, however practical and well-inclined, would not be able to impart instruction in a pedagogical manner, or teach in accordance with the educational purposes to be attained. We therefore opened at Easter, 1880, only a course of instruction for the proper training of teachers, so that at Michaelmas of the same year we could enrol the first batch of ninety pupils, and confide them to the care of the newly-trained instructors. Another important point was to decide on what branches of work were to be taught; we made choice of paper-, pasteboard-, wood-, and metal-work, and modelling, afterwards adding wood-carving for the ornamentation of wood-work, and the cultivation of artistic taste in the boys. In all these branches we have now won valuable experience. Paper-work is necessary for young pupils of six to eight years of age; then we pass on to the manipulation of cartoon and pasteboard. The easiest metal-work, the bending, soldering, cutting of lead and wire, are necessary in producing the simplest forms of physical apparatus; and modelling (the moulding, casting, cutting, &c., of gypsum and clay) is important as an improvement of taste, and as continuing the drawing instruction afforded by the elementary or public school. That the use of the plane, saw, and gouge is not to be dispensed with in wood-work is a matter of course; yet I cannot approve of the method, as adopted in Sweden, of confining the instruction of children to manipulation of wood alone. Thus we pushed on sturdily and undismayed, although we had to struggle hard against prejudice and financial difficulties; on the other hand, we had the consolation of being heartily and strenuously supported by teachers and pupils. The course of instruction for teachers proceeded parallel with that for pupils, and those of the teachers who proved to be possessed of aptitude were intrusted with the instruction in that branch in which they most excelled. The municipal authorities provided school localities gratuitously. The Gemeinnützige Gesellschaft and other well-wishers of the enterprise bore a part of the expenses; the rest was covered by contributions on the part of the pupils and teachers. The Minister of Public Instruction watched the development of our school with sympathetic interest, and on several occasions testified the same by granting pecuniary aid in its support. Meanwhile agitation for the spread of the movement was successfully carried on in all parts of Germany; and a central committee for technical education and domestic industry had been constituted, including men of high station and influence. On the 3rd of June, 1882, it convened a general meeting of the branches of the society in Leipzig, in which I had the honour of reporting on the state and progress of our workshop. I enclose the report herewith (Appendix III.), and beg to draw attention to the review of publications contained therein, referring to handicraft instruction, and to the interesting report on the exhibition. The meeting organized an exhibition of articles produced in the principal work-schools of Germany and Switzerland, together with a report giving a fair account of the state and working of the schools at that time. The exhibition was visited during the few days it lasted by a great number of people, including many hundreds of pupils. The performances of the Leipzig school were specially noticed by educationists. "The German Periodical of Educational Instruction," an important pedagogical organ, wrote: "Let us turn our attention to the works exhibited, and we shall be immediately struck with the progress which the Clauson-Kaas (Danish) method has made in the hands of the Leipsic teachers. We see at once that nothing anomalous

has been introduced into the school, but all that lies before our eyes proceeds logically and with necessity from the school, inasmuch as the exhibits are invariably found to have some connection with youthful life as well as with the subjects commonly taught in a good school."

The exhibition also contained specimens of Swedish workmanship sent in by Director Salomon, of Nääs, in Sweden, affording for the first time an opportunity of studying the system of Swedish manual instruction, which has struck out a way quite independent of the German. The founder of Swedish manual education is Uno Cygnäus, who, under the influence of the German pedagogues Pestalozzi and Fröbel, was led to devote his energies to this new creation; so that the source of Swedish manual instruction must be traced to German pedagogy. In Sweden, as has already been mentioned, wood-work was exclusively taken into consideration; but also in this instance the purposes aimed at were *educational*, and not industrial. The principle of the Swedish system is, however, too narrow; it takes notice only of the *older* boys, joinery being too difficult for smaller boys; but on psychological grounds it is precisely the younger child that most requires illustrative instruction in the development of his faculties. Swedish manual instruction is quite unconnected with, and totally independent of, the other branches of instruction, producing *only* utensils of general use in the household. Another drawback to the progress of Swedish industrial instruction is the great expense of procuring suitable joiners' benches, at which not only classes of thirty to forty pupils, but small batches of not more than twelve to fifteen, can be employed, which, of course, renders the introduction into larger schools a matter of considerable difficulty. It is my conviction that, if we are to train the hand pedagogically, we must not confine ourselves to one species of material, for our purpose is to teach the child the alphabet of all work—*i.e.*, the use of all elementary tools, which is not possible by restricting the instruction to wood alone. Particularly the working of metals, which play so important a part in daily life, which require a very different treatment from that of wood, as may be seen by the processes of soldering and welding, should not be excluded from any efficient scheme of instruction.

Highly, therefore, as I value the Swedish system, yet I think it labours under the disadvantage of being too limited in scope. I completely agree with Professor Runkle when he says: "It is the province of a fundamental general education to deal with generals, leaving to the student the task of finding out how his general knowledge applies in special cases. In short, he learns the *technique* of his trade after he leaves the school, and enters upon his chosen speciality. But it is quite another thing to leave out of his general education all those elements which underlie *all industrial pursuits;* and particularly if it can be seen that the introduction of these *general elements* is not only educationally feasible, but desirable for the roundness and unity of the general education, and valuable, no matter what the future of those so educated may be. Nor does it follow, as some suppose, that, because the manual element is introduced into a course of study in proportion to its value as an educational factor, therefore all who take the course must necessarily become mechanics, any more than it follows that, because all are taught the art of drawing, all must therefore follow some pursuit in which this art enters as a necessary element."

After a long consideration of the Swedish system, we decided on continuing in the path hitherto followed, and soon had the satisfaction of seeing our workshop in a flourishing condition. Visitors from almost every country, from Spain, France, Chili, California, Russia, Sweden, Norway, and of course from Austria, Switzerland, and the different States of Germany, came to become acquainted with our methods, and only a short time since we had the pleasure of receiving a visit from Mr. Guise Larnach on behalf of the Government of the Colony of New Zealand. My correspondence grew more voluminous every day; advice, specimens of work, models, &c., were asked for in all quarters. In a report of the Home Industrial Union of Dorpat, in Russia, our establishment is made mention of in the following terms: "The manual workshop of Leipsic is an institution that claims universal attention by its rapid and energetic growth. It is conducted on principles which deserve the highest consideration on the part of Municipal School Boards."

At Michaelmas, 1883, our school made another advance in consequence of a general invitation (Appendix IV.) issued by me to the youth of Leipsic, explaining to them the object of our enterprise, and calling upon them to come and avail themselves of the splendid opportunities offered to them of improving their education. The address was a complete success, and from morn till night I was literally besieged in my lodgings and in the workshop by pupils young and old making application for admission. The organ of the German Central Committee for Manual Instruction makes the following remarks: "When four weeks ago the German Central Committee for Manual Instruction was assembled in Leipsic, Dr. W. Götze, the pedagogue of the movement, surprised his colleagues by a new specimen of his inventive resources. It was an address to the pupils of Leipsic to solicit them to obtain from their parents or guardians the permission to enter the school-workshop of Leipsic. At the head of the address was a very pretty vignette by Drawing-Inspector Mr. Flinzer, illustrating the bustle and life of a school-workshop, and hinting at the intimate connection existing between drawing and manual instruction. Hitherto the Leipsic school had been in operation for three years, and had about seventy to eighty pupils following the four courses of instruction. Now no fewer than 550 boys of all classes of society applied for admission, and further applications still continue to pour in, which for want of teaching power must unfortunately for the present be disregarded. Space and tools were indeed not wanting; but where were so many efficient instructors to be procured all at once? This signal success proves how soon and effectively persevering and enthusiastic devotion to a good cause will lead to a happy result. The victory gained in Leipsic over indolence and prejudice will also exercise a salutary influence in all other places where people are up and doing in this good cause."

The great success of this address to the studious youth of our city encouraged us to address a similar invitation (Appendix V.) to the teachers of Leipsic, in which I explained the pedagogical importance of manual instruction. This step also proved successful, so that we were able to increase the number of teachers' courses to seven. Thus out of the four classes for scholars organized for the summer half-year, we had now twenty-five classes, besides seven courses for teachers. (*See*

Appendix VI.) At Michaelmas, 1883, we had again the pleasure of seeing the German Central Committee meet in Leipsic. Mr. Flinzer, Inspector of Drawing, and reformer of our system of free-hand drawing, read a very interesting paper on the connection between manual instruction and drawing. I had the honour of reporting to the Central Committee on the question as to what course manual instruction was to pursue in future. As I laid particular stress in it on the training of teachers for manual instruction, I beg to enclose it with this report (Appendix VII.).

Thus by the support granted by the municipal authorities and by the Royal Saxon Ministry of Public Instruction our school continued its onward movement. Another important step was taken last summer when we inaugurated a course of instruction for provincial teachers (Appendix VIII.), as nothing is more conducive to the spread and growth of our system than the hearty co-operation of all elementary teachers. Twenty teachers from different parts of Germany and Austria attended the courses. (For further particulars see Appendix IX.) The result was so satisfactory that we have decided on a repetition of the experiment in the course of next summer. We hope to render the arrangement of calling in provincial teachers during the summer vacations permanent, so that Leipsic may in time become the headquarters of the movement. Of course the instruction for the teachers and pupils of this city continues without interruption throughout the whole year. At Easter every year there is a public exhibition of the work done, which has invariably the effect of enlisting on our side many persons desirous of participating in our endeavours. I also beg to enclose the programme for the coming half-year (Appendix X.), in which you will find all particulars concerning rules and regulations, terms of reception, course of studies, &c. Notwithstanding the sympathy and encouragement which we have received from various quarters, yet I must not ignore the difficulties we have still to cope with. One of the principal is the inconvenience of receiving pupils of very different ages, drawn from every class of school in our city. Our enterprise is to be adapted as much as possible to the wants of the public schools, high and elementary, while attendance is altogether voluntary. For this reason we cannot so fully suit our operations to general school business as we should wish. To obviate as much as possible this difficulty we intend to organize *normal* classes, in which children of the same age and belonging to the same school form a class, which will pursue a course of instruction during a period of two consecutive years. The classes are to receive, instead of two lessons a week as hitherto, three to four. A circumstance that greatly facilitates the establishment of such classes is that we are not dependent on school fees, and that we are not obliged to receive every unfit pupil who may apply for admission. We must be free of school fees and in a position to give gratuitous instruction to poor but qualified pupils. We have applied in this sense to municipal authorities, and hope for a favourable reply to our request. If we succeed in founding these normal classes we shall materially promote the cause of technical duecation.

We are, then, as may be seen, now in the centre of the movement and the struggle. Our field of operation is the workshop in connection with the school. Here thousands of children must feel the charm of manual labour, a pleasure to all who are seriously inclined. Here our youth, surfeited with mental nourishment, must regain at the work-bench their buoyancy and recover their fresh and lively disposition; then their parents will perceive with surprise and joy the healthy change that has come over their children, who now begin to take a keen interest in the surrounding world, who now carefully observe what they were formerly accustomed to pass by with careless indifference. Then it will be no longer necessary to agitate for this educational work; then the boys themselves will be the pioneers of the good cause.

The growth of the movement in the different parts of Germany is similar to ours. Everywhere the Governments take a favourable view of our exertions, but none has yet decided on recognising it officially as a branch of popular education. This is comprehensible, for, on the one hand, the opposition of many teachers, who do not understand, or do not wish to understand, the matter, is very great; on the other hand the methods of instruction are not yet sufficiently tried to be incorporated as a solid organic factor in general education. We may expect that as long as this new element in education is not properly organized, the Governments will assume an impartial attitude, without, however, refusing friendly countenance to all private enterprise bearing on manual instruction. But we must not complain; we must, on the contrary, rejoice to see how rapidly and vigorously our young seed is sprouting up. In the little kingdom of Saxony no fewer than fifty-two work-schools are in operation. It is true they are very different in plan and scope; one purporting to prepare by manual education for a higher industrial training, another aiming exclusively at its application to trade; a third group is intent on the moral welfare of boys, whose education has been utterly neglected, by subjecting them to a course of technical instruction in reformatories; and lastly, a fourth group proposes to attain purely pedagogical ends. But as yet such workshops are not public or official, but purely private institutions. The same differences of purpose are discernible in the other parts of Germany where (in about fifty towns) manual instruction has been introduced. Some manufacture household utensils, others adapt their work to the necessities of general instruction, the pupils devising and executing as far as possible models of the things which form the subject of instruction; some confine themselves to the working of only one material—wood; while others extend their manipulations to different substances. In German work-schools we therefore find one or more of the following branches: Joinery, carving, sawing, bookbinding, pasteboard-work, brush-making, straw-plaiting, matting, turning, and garden-work. Most of our German manual schools —as, for instance, in Dresden, Hamburg, Frankfurt-on-the-Main, Görlitz, Bremen, Gera, Stuttgart, Mühlhausen, Aschaffenburg, Augsburg, Salzungen, Halle, Pforzheim, Hannover, Osnabrück, Emden, Posen, &c.—are the creations of private enterprise. Strasburg is the only town in which the municipal authorities have taken the matter into their own hands by uniting manual classes with the course of instruction in their public schools. The last report on the Strasburg institution speaks very favourably of the experiments made since 1882. It says: "Indeed the advantages of such instruction cannot be denied; it greatly improves the boy's knowledge of form and symmetry, and calls forth, as it were in play, skill and manual qualities which must be of great advantage to the

apprentice in learning his trade." Instruction is given gratuitously for two years at the rate of three lessons a week. In seven elementary schools we find instruction in pasteboard-work, carving, and modelling. The classes consist of from twenty to thirty pupils, and the results have been so favourable, that it is now contemplated to enlarge the sphere of activity by taking metal-work into the programme of instruction. But the most important desideratum is, as I have already mentioned, the training of efficient instructors for this new branch. For this reason the steps taken by the Ministers of Public Instruction in Prussia and Saxony in favour of the voluntary introduction of manual instruction into all training-schools for teachers are very significant. In Prussia a trial has been made in the Protestant and Catholic seminaries (training-schools), which, as I have been assured, has proved perfectly successful. In Saxony the Ministry of Public Instruction will grant the necessary funds to such training colleges as desire to embody the manual element in their course of instruction. The German General Committee, which holds its annual meeting this year in Görlitz, has charged me with drawing up a report on the results of manual instruction in the Teachers' Training Colleges in Saxony. I shall be very happy, when I have collected the necessary information, to communicate with the New Zealand Minister of Education on the subject.

Another important undertaking of the Central Committee is the publication of a work containing the patterns and designs to be imitated in manual instruction, the first part of which, containing designs for carving, has been already issued. I enclose the prospectus of this publication (Appendix XI.), in which I make some reference to the development of manual instruction in foreign countries.

To resume, then: the prospects of the movement in Germany are not unfavourable, it is true; but we must not forget that there are still many difficulties to be overcome. As has been already intimated, the chief impediments are the prejudices of many teachers, who, having themselves received no practical instruction in their course of education, are not able or willing to occupy themselves with the subject, consider it a degradation of the school. Fortunately these enemies are more than counterbalanced by a great number of enthusiastic friends, who have learned to appreciate the blessings of labour in their pupils, who know how spontaneously and zealously most boys set to work in the workshop, how their intellectual life is aroused, with what interest they learn to observe—in short, how, weighed down by the pressure of school-work and long sitting, they find ample relaxation in the work of their hands. This is the experience everywhere, in Germany as in Sweden. In Sweden schools with manual instruction are more punctually frequented than schools having only the ordinary theoretical course. Another impediment is the prevalent over-pressure in our schools. Our time-tables are so completely filled up with lessons of all kinds that there is absolutely no room for any other branch of instruction. The school lays claim to all the time at the disposal of the pupil, for, during the so-called free time or hours of disengagement, they have a vast number of tasks to learn or problems to solve. Our pupils may be said not to have a single hour of leisure or recreation. A boy who has a special talent for some art—for instance, for music—must either become a bad scholar or allow his talent to degenerate; the school affords him no time for the free development of his endowments. Our public instruction is given on the principle that "much will serve much"; the opponents of over-pressure are of opinion that "less would serve more." We cannot measure the extent of the influence which the school exercises on a child by the number of hours he sits in school. Also in this respect experience is decidedly on the side of manual instruction. The cheerful eye, the bright countenance, the open manner which the boy acquires in the workshop will be a gain to the other branches of instruction; and thus it is explicable that children taking part in manual labour will not lag behind in the other school branches, provided that theoretical instruction be a little curtailed in behalf of practical instruction. What is lost for the school with respect to time is richly recompensed by freshness of body and mind. The boy who has an opportunity of devoting a few hours a week to the workshop, and finding there bodily and mental recreation, will not only overtake, but even surpass, the boy who has been intellectually surfeited; to whom learning has become a burden. The third impediment we have to struggle against is the lack of material support. The Governments have repeatedly acknowledged the educational importance of manual instruction, and even grant such pecuniary aid as they may have at their disposal, but the great military expense of Germany requires economy in all other departments. In this sense the development is still slow; but, considering what we have accomplished during the last five years, we have no reason to despair of the future.

In a flourishing, progressing colony like New Zealand, whose Government is fully alive to the fact that an excellent investment of capital would be the training up of a sound practical generation of men—a Government magnanimously jealous of its educational interests; in such a country, I say, the manual movement ought to make rapid progress. With a man at the head of the Education Department of whom it is said, "When he went into another sphere of life he kept his old earnest zeal for the education of the people, and when a member of Parliament, those who read the debates will recognise his broad hand in our present Education Act," and who has been lauded as possessing "a hearty love of the colony, and also a great capacity of work and progress, *with a good deal of outspokenness and straightforwardness*"—a man for whom the words he addressed on the 18th December, 1884, to the boys of the high school in Dunedin, on the health and moral conduct of boys, will say more than all other praise—it is my opinion that, with the proper instructors, this branch of education might be vigorously promoted in New Zealand.

On the best method of manual instruction adaptable to the state of education in New Zealand I am sorry to say I can pronounce no definite judgment, happy as I should feel in contributing something to the furtherance in that distant country of an idea which I have so long served with enthusiasm. I firmly believe that a well organised system of manual instruction would be a great blessing to education in New Zealand; that, like a goodly seed-grain when sown in virgin fruitful soil, it would soon take root and thrive well. But I cannot venture to give in detail the means by which manual instruction might be transferred to New Zealand, although I have taken much pains

to collect from various sources* some knowledge of the state of education in New Zealand. I venture, however, to say, that whatever that state may be, only such practical work deserves to be embodied in a system of national education as will lead the child to observe and reflect, as will as exercise and strengthen the hand, train the eye, and cultivate the mind. All purely mechanical labour, such as brush-making, straw-plaiting, as carried on in workhouses and prisons, which rather depress than enliven the faculties of the soul, should never find entrance into a school in any way mindful of its high mission. The labour is, therefore, to be carefully suited to the educational object in view, and all special trade tendencies are to be avoided. The school is a place of general education, and not of special training. Above all and under all circumstances it must be remembered that effective pedagogical instruction in manual work can be given only by well-trained teachers and not by artisans or journeymen, however skilled in their respective branches. Teachers must be the binding link between trade and the school. The teachers, however, must be initiated and made fully conversant with the different branches of trade by intelligent and skilful artisans, after which they have to arrange and methodise the knowledge acquired for the purposes of a systematical course of technical instruction. The pedagogical element in such instruction is to be entirely confided into the hands of the teacher. For this reason I can imagine no other way of establishing the system in New Zealand than by having a number of teachers thoroughly prepared in some of the most important branches of handicraft.

Although I cannot at this distance give any more special hints and advice, yet I am sure that the experience we have gained here within the last five years will be of use elsewhere, and in the interests of the good cause I shall be glad to afford the Department of Education in New Zealand every assistance and information in my power; also models, designs, specimens, or any other objects of interest in connection with manual instruction; I only beg that distinct queries may be formulated to which definite information is requested. I intend during the course of the present summer to make a pedagogical tour through Switzerland, Germany, and Sweden, so as to become theoretically and practically conversant with the working of the manual element in different parts of Europe. In Nääs (Sweden) I intend to undergo a course of practical instruction, so as to be fully enabled to judge of the Swedish system *(Holzslöjd)*. I should be very happy to communicate with the Government on any experience I may gain during such a tour, provided the points on which information is desired shall be more clearly defined. I should also like to have a more special knowledge of the system of education pursued in New Zealand. My knowledge of English will, I hope, be quite sufficient to deal with the contents of any account, report, or work on the subject you may be so kind as to send me. Should the Education Department of New Zealand eventually desire to avail itself of my services in the organization of a system for New Zealand, I should be very glad to place them at its disposal, in case I should obtain leave of absence from the Saxon Ministry of Public Instruction.

Hoping that this preliminary sketch of the state of manual education in Germany may meet the approval of the Colonial Government, I conclude with the best wishes for the progress of popular education in New Zealand in general, and of manual education in particular.

I have, &c.,

DR. W. GÖTZE,

Master of the Realgymnasium and Director of the Pupils' Workshop.

Leipsic, April, 1885. Kaiser Wilhelmstrasse, 19.

APPENDIX I.

EXTRACT from Report of the Utilitarian Society of Leipsic, 1881.

AT the meeting of the 18th November, 1879, on a proposal being brought forward by Mr. Lammers on self-employment and domestic industries, a lively discussion ensued, which at its close led to the acceptance of a proposal brought forward by Dr. Wiene (Councillor of the Imperial Court). This proposal was to refer it to a committee to examine carefully and report in what way the object in view could be practically realised in Leipsig. The committee consisted of Dr. Barth (school director), Professor Dr. Biedermann, Dr. Götze (headmaster, School of Art), Director Hasse, Dr. Hempel (district school inspector, school councillor), Dr. Ph. Howard, Dr. Kirchhof (bookseller), and Professor zur Straszen.

During the ensuing month the committee pursued searching inquiries, the result of which was made known to the meeting of the 27th January, 1880, by means of Dr. Götze's report. The recommendation of the committee, which obtained throughout the approval of the society, addressed itself in the first place to obtaining a closer limitation of the question for Leipsic, so that the educational element should be kept above all in the foreground. "An industrial and directly trade object" (so called in contrast to the efforts of Clauson-Kaas, to which Mr. Lammers had most directly referred) "is not to be aimed at under the present circumstances of this country. The connecting of instruction in work with the public schools was pointed out as the final object. It ought to be a counterbalancing influence to the exclusively theoretical instruction, and it is as it bears upon the latter that practical work should be recommended. On this basis the following resolutions were come to: (*a.*) The establishment of a work-school in Leipsic. (*b.*) The establishment of a course for the creation of a suitable teaching power in this work-school by the training of a proper staff. (*c.*) The acquisition of a desirable locality as well as tools and materials for work. The question of site, it is hoped, may be left to the City Council of the Town of Leipsic. (*d.*) The issuing of an appeal to the public to take part in a course of workshop-instruction for boys. This

* "Voyage of the Austrian Frigate 'Novara' round the Globe," chapter New Zealand: Hochstetter, New Zealand. Meinicke: "The Pacific Islands," Third Book: New Zealand. Christmann und Oberländer: Oceanie: Die Inseln der Südsee. I. Theil: Neuseeland, aus Grossbritannien der Südsee. Seelhorst: "Australien in seinen Weltaustellungsjahren 1879-1881," Abtheilung III.: G. Neuseeland. Jung, "Australien u. Neuseeland." Jung: "Der Weltheil Australien, IV. Abtheilung, 2: Neuseeland.

course to begin in 1880. Sons of well-to-do parents to pay a share of the expenses; sons of poor parents to be taught gratuitously. The management intrusted the carrying out of these resolutions to a committee, consisting of Messieurs Dr. Barth, Dr. Götze, and Professor zur Straszen. Afterwards, at the request of Dr. Götze, Dr. Böttche was added to the committee.

The course for teachers held in the summer half-year of 1880 was separated into four divisions—bookbinding-work, 8 learners; plain and ornamental joinery, 19; metal-work, 12; modelling in clay and plaster, 12. The first three courses were conducted by Mr. Niederley, teacher in the "Barth" Institute; the fourth by Mr. Schaaf, assistant to the town school for artisans. For the commencement Director Dr. Barth kindly lent the drawing salon of his institute from Whitsuntide, and the Town Council provided the necessary space in the old Thomas School.

On the 6th October, 1880, the scholars' workshop was opened here, and the course of instruction was separated into four divisions, and was conducted by Mr. Niederley for two hours weekly. The number of participants amounted to ninety, of whom, however, some individuals are counted twice over as participating in two courses; seventeen had free admissions. "As was to have been expected," says a report made in the beginning of April, "this lively interest had no stability; many scholars cooled in their zeal as the work became more difficult. To many, their participation became impossible by reason of the increasing requirements of the school and the approach of Easter; and many who had hoped to find in the school-workshop a means of pecuniary profit, turned their backs on it quite disenchanted. From this time it appears that only fifty-four participants were present at the courses."

On the whole, however, the committee were encouraged by the results to take further steps. We have obtained much experience, and we clearly recognise our difficulties as the undertaking develops. The most serious impediment lies in the circumstance that the great demands which the schools, especially the higher ones, are compelled to make on their pupils leave them little leisure for any activity of their own in any work not required by the school. Another difficulty, which refers especially to the manner in which we have to exert ourselves to attain our object, is caused by the different capacities, ages, and degrees of culture of the boys we have to teach; so that a small proportion only can work together in the school, and we can hardly think of joint instruction. In spite of all we must work on unremittingly in the hope of bringing about the acknowledgment that the present system of school instruction really needs to be supplemented by the education of the eye and the hand, and such a hope is justified by the great interest which the question of instruction in work creates everywhere. In the Board of Education the result of our experiments is watched with sympathetic interest. In all scholastic and professional circles it is now a prominent question. And the political newspapers, as well as those specially devoted to education, have made the necessity of work instruction one of their subjects for discussion.

To the awakening of this interest the report first mentioned of Dr. Götze has contributed its share. Through the influence of the management it was accepted by the "Workman's Friend," and was afterwards distributed as a *brochure*, with the title of "The Complementing of School Instruction by Practical Work: Leipsic, 1880." To meet the cost of this distribution, a sum of 1,000 marks was taken from the funds of the society. This was covered by extraordinary contributions from the members.

In the summer half-year just passed, the committee, induced by the experience already mentioned, addressed their first efforts to the improvement of their teaching-staff. Mr. Niederley undertook the bookbinding work, and Mr. G. Mühlbach the modelling, whilst the instruction in wood-work was undertaken by Mr. Werner, master-joiner; and in metal-work by Mr. F. T. Kayse, locksmith; in both cases with most praiseworthy readiness, and quite gratuitously. The number of participants reached from six to fifteen. The school course was carried on at the same time.

A meeting was held at Berlin on Instruction in Work in June of the present year. Professor Dr. Biedermann took the chair; friends of the cause from various parts of Germany were present. The committee was represented by Dr. Böttcher and Professor zur Fraszen. The results justify the belief that in future more prominence should be given elsewhere, as well as at Leipsic, to the educational side of the matter.

APPENDIX II.

THE SUPPLEMENTING OF SCHOOL INSTRUCTION BY PRACTICAL EMPLOYMENT.—Memorial drawn up by order of the Utilitarian Society of Leipsic by Dr. PHIL. WOLDEMAR GÖTZE, Leipsic. Published by Henry Matthes (F. C. Schilde), 1880.

Too much knowledge does not instruct the mind. (*Heraclitus.*)
It is well to add to your studies some business; then you may abide free from sin. (From the *Talmud.*)

SINCE the year 1876 there have arisen in several parts of North Germany views on the reform of popular education which have created a continually-increasing interest, and which found their way to us from our northern neighbours in Denmark and Sweden. An active movement had long ago taken place there for promoting the cause of home industry. Of this movement it is right to name the originator and inspired champion, Captain A. D. Clauson-Kaas, of Copenhagen.

Obliged by circumstances to bring up and educate his children himself, his experience led him to the conclusion that in a comprehensive plan for bringing up children the cultivation of the understanding should be supplemented by exercising the senses and by carefully and skilfully training the hand. He followed up this idea and tested its practical working, and ended by becoming its zealous exponent; and in the peculiar circumstances of his home it speedily expanded into a plan for bringing up the young people of a whole nation and reforming its domestic life. Thus arose the home-industry movement. Its great efforts were directed towards withdrawing the country people from the idleness, the dissipation injurious equally to their domestic life and to their morals, the gaming and drinking indulged in during the long winter evenings of the north, and leading them to experience the blessing of industry, by employing them in practical and pleasant work

which could be done in the family circle. In pursuance of this aim, in the year 1873, the general Danish Home Industry Society was founded. The object of this society was to direct the efforts which were being made all over the country by the home-industry unions, and to make a common centre for them. The leader of this movement soon recognised that the strongest lever in his hand for the extension of home industries was the school. It was a more grateful task to awaken in the young people a taste for practical employments, than to arouse in those already grown up a pleasure in home industries. It was far easier to bring young people up to industry than to wean their elders from idleness and self-indulgence. So then Clauson-Kaas, in accordance with the old saying, "The future is in the hands of him who controls the school," soon energetically directed his activity to the founding of "work-schools" by the side of the "learning schools," as he calls them; and in this he was effectively supported both by the Danish Government, and also by the popular representatives. The ultimate object is the introduction of work-instruction as an organic member into the plan of general school-instruction. In Sweden, for instance, the pedagogical side of the home-industry idea is accepted with the liveliest interest; and the "slöjd," the work-instruction, found such eager recognition there that a motion was speedily brought forward in the parliament to make the introduction of the system into the public schools obligatory, a motion which fell through only through the impossibility of finding sufficient trained teachers. After this the Swedish Government supported the introduction of work-instruction by granting considerable sums of money. Later on the idea found its way into Germany. In Berlin in 1876 a union for promoting home industry was formed, which busied itself in establishing a teachers' course and founding a scholars' workshop. Since that work-instruction has taken root in other places—viz., in Kiel, Brunswick, and Görlitz; and quite lately the provisional Government of Hanover granted a sum of 1,000 or 1,500 marks towards the holding of a teachers' course.

If in Germany the pedagogical side of the question has found the readiest sympathy, this is easily explained by our peculiar situation. In the first place, the conditions of domestic life are quite different with us from what they are in the north. The winters are shorter; agricultural work does not entirely cease during the coldest time of the year; the countryman is, with us, not separated by long and dreary distances from centres of industry, and so compelled to help himself, as are the inhabitants of lonely Swedish farms which lie far away from any town; further, the saving on the cheaper articles that are made on a large scale would not be appreciable; and finally, the countryman has had his taste for what is pleasing in form and colour so cultivated by artistic manufactures that he would not be satisfied with his own coarse work. On the other hand, home industry, carried out with great zeal and directed to the home production of simple utensils and household objects, would certainly prove injurious to our industries; and if it became the rule for every one to help himself wherever it is possible, and by his own skill to be able to do without the carpenter, then, indeed, an active propaganda of home industry would bear hardly upon our already hard-pressed industries. As a consequence of this, the good cause of home industry would arouse such bitter enmity that its important influence on other departments would be destroyed, and the thing itself would fall to the ground. If these considerations tell against the attempt to establish amongst us unions for the promotion of home industry for adults, still the implanting of the idea of home industry in connection with schools is of great value, because through this a great want in our system for bringing up young people has been supplied. It appears to be generally desired that a beginning should be made in acknowledging that our present system of bringing up young people upon a purely mental instruction is founded upon a false basis; that it is trying to effect its object by means of over-crowded acquirements; that in imparting an overwhelming mass of information the careful balancing of the different elements is neglected; that the conversion of the "to know" into the "to do," the cultivation of a strong moral will, the gradual development of the pupils into decided characters, is not accomplished. In days when every glance reveals our weaknesses and failings to the public eye, when the stones declare what we need, it is unnecessary to speak more particularly on this point; and this is very evident, that our failings are for the most part failures in educational method, and that consequently it is in education that we must seek the most effective means of redress. If there were nothing else to prove the defectiveness and onesidedness of our training of our youth, it would be forced on our notice by the proposals for improvement which come in from every side, and are urged upon us with the greatest earnestness. However these may differ from one another fundamentally, they have always one end in view—to fight against the onesided culture of the *intellect* by instruction, and since the matter of the instruction is not everywhere fully and clearly understood by the pupil, much less gained by his own labour, against the unpedagogical overloading of the *memory*. They are agreed in their demands that the harmonious development of the complete human being should not be forgotten in the care for one part, be that part ever so important. Herr Fröbel's scholars point to opinions of their master on the subject of pedagogic reform—opinions which in spite of the repellant coldness of his opponents, and in spite of all the misty fanaticism of the adherents of the orthodox system, have always maintained their place in the pedagogic order of the day. Others speak with enthusiasm of the happy results of the school gardens, which not only lead to a knowledge of nature, and implant a love for her in young hearts, but are also useful in giving palpable evidence of the blessedness of work and of pleasure in its results. They are most conducive to the health of the scholars by inducing them to remain out of doors, as well as by the break the gardening makes in the hours of instruction. Some insist strongly upon drawing, and urge that it should take its place next to instruction in language, and should occupy an important position in the school plan; by others the necessity is pointed out of giving the rising generation more bodily vigour, and making them more active, whilst rendering them capable of bearing arms. These last objects are advocated by physicians and those who teach the rules of health. These point out the danger to health from the immoderately long sitting in enclosed spaces, the contracted and continuous exertion of the eyes necessitated by the school rules, and earnestly plead for a lower standard of instruction. But the battle against the system which has gradually grown up and is now in force, is a very hard one,

and the difficulties yet to be overcome are great. Through the ever-increasing development of knowledge the school tasks are always being added to, and these have to be mastered. Through the constantly progressive tendency to division of work, a corresponding movement is developing itself in the schools in relation to learning—an urgent determination to divide knowledge into branches, the leaders of which naturally do not keep in view so much the general aim of the school, as the placing as high as possible of their especial subject; whilst the variance between the demands which *must* be satisfied and those that *can*, with any hope of a good result, be enforced from average ability, is continually growing greater and greater. While this is so there is at the same time a desire to find room for the exercise of the eye and the hand in practical employment, and to give a fresh impetus to that which so much concerns the general training, as opposed to mere instruction. Next to the effort to enrich the mind comes the desire to develope the power to do, through an "Education for Work."

These last words remind us that the suggestions which come to us from the north have told us nothing new, but carry us back to former very active efforts made by ourselves. The book* which adopts this title appeared in Leipsic as early as the year 1852. It gives an account of a great number of attempts made in the most different places to introduce practical work as one branch of education. It states the unanimous opinion of such pedagogues as Grases, Curtmann, Grube, Kirchmann, and Michelsen, that work should be united with instruction, and so mingled with it as to become an organic part of education taken as a whole, exactly as is now done in Sweden with such happy results. So that the idea which first started into life long ago in Germany, but which, later on, was put aside by the urgent necessity of attending to questions of more general interest, and then was for a time forgotten, has reappeared in the north. It has led to a most stirring movement, which has not contented itself with theoretical discussion on the subject, but has marched on to the most far-reaching and practical results. From the north this idea now comes back to us, with new proofs of its value and of having attained a strong vitality.

In face of the important effects which work-instruction has unmistakably produced in northern countries; in face, too, of the numerous and, for the most part, well-founded complaints of the deficiencies and onesidedness of our educational system; and in face, moreover, of the demands so often renewed and so pressingly urged, it is impossible to refuse to give to these demands a most serious attention. It will not do to say that they have been brought forward before, and that the proposal to train young people to work has not proved fitted for the needs of practical life. Let it be admitted that the question remained lifeless, left no trace, led to no result, and vanished altogether from the order of the day, still such a refusal to reconsider a question once so actively discussed would indeed be unjust. It must be admitted, too, that the method of introducing work-instruction into Germany was not so practical as that now adopted in Sweden and Denmark. The work-schools formerly looked more to the outer advantages, to the profit produced by the manufactured articles, and to the acquisition of a certain amount of routine facility, than they did to the training of the senses and varied exercise of the hand through the most differing kinds of work. Again, the close connection of work-instruction with school was not sufficiently striven for, so that the first was isolated, and not being on an equality with the other instruction, fell behind it, and it became possible to set it altogether aside. Besides all this, it is certain that the neglect of all pedagogical reforms in the life of our people is a natural consequence of the enormous amount of work required by the other departments. Shall we, because blunders have been committed, and the task set aside through the pressure of other affairs—shall we refuse to take it up again? Certainly not. That the right moment has arrived for resuming it is clearly shown by the great interest which the idea, which has now wandered back to us from the north, excites, and by that interest spreading so quickly and so far. Perhaps this is a good omen for our future.

If people will only resolve to collect experiences by practical efforts, and to learn to become acquainted with work-instruction by set experiments, then the next thing to be desired will be they should be thoroughly clear in their own minds as to its nature, its objects, and the means it proposes to employ to attain those objects; and, finally, the effect expected from it. It is proposed to put this plainly in the following statement.

In the first place, work-instruction satisfies a demand of pedagogy—to foster *the perceptive faculties* in full measure. Although it cannot be said that other branches of education do not also do this, still work-instruction does it in an entirely different way from theirs. True, geographical, physical, and mechanical instruction are not possible without intuition, still the teacher has no certainty that this will be exercised at all times by every scholar. Now, as opposed to this, work-instruction is simply impossible without using the sense of sight or observation. The scholar proves by his work that he has seen correctly; he also demonstrates by it the impression he has received from without. This continual giving an account of what has been seen, through the work performed, has as yet only been accomplished by instruction in drawing, in which subject the new method of teaching especially keeps in view the schooling of the eye to see correctly, and not merely the teaching of the hand to copy. Naturally, work-instruction acts in the same way. The boy who can use the saw, who works with the plane, the pincers, and the hammer, must use his powers of observation; he must use his senses, and he uses them willingly.

Thus practical work, like instruction in drawing, is a healthy way of preventing the possibility of the powers of observation being altogether in abeyance, whilst instruction in language calls forth the habit of closer thought and the power of abstraction. Now, whoever knows how little our scholars observe, how seldom they understand that which goes on outside of them, will welcome with pleasure the necessity laid upon them to see. How few are able quickly to take their bearings by reference to the cardinal points; how few have thoroughly observed the visible course of the sun; how few have looked for themselves at the lengthening and shortening of the shadows at the different seasons of the year! Here a great difference exists between the scholars who come in from the country

* Education for Work: a Demand of Life made on the Schools. By Karl Friedrich. (Friedrich Karl Biedermann.)

and the children from a large city. But even the former unlearn their habit of observation during the time they spend at school, and one can almost say that the more school-taught they are the more their observation of the outside world becomes blunted. As against this, what they have got is to have their heads stuck full of all sorts of fine knowledge, which, as a general thing, lies ready in their memory for school use, and, when that is done with, is forgotten. A self-acquired habit of observation is not so easily forgotten; it is a thing which, once learned, is learned for ever. So also the mind, which in grammatical instruction is prone to contract itself, in the workshop is brought through the senses into full play; just as the blood which, through the long time spent perched on the school forms, is dammed up in the interior organs, is circulated throughout the body. The brightness and health induced by the gymnasium do not pass away with the time spent in the exercises, but entirely change the boy; and just so the bright look, the mind open to every impression, which is what the boy gains in the workshop, is serviceable to the other branches of instruction. It is this which elicits the unanimous praise of the Swedish teachers in favour of work-instruction, this which gains the favourable verdict of the older German pedagogues, that theoretical instruction does not suffer through the practical employment of the scholar, for what is lost in time is richly replaced by the brightness, the mental flexibility of the pupil. One must not count as lost to learning every hour which the scholar does not pass screwed to the school form. By the constant habit of observation, the mind receives matter for reflection, the mental life becomes more active, many things which the pupil would formerly have passed without notice, now excite his interest, and render him more susceptible to other impressions; so that it is no contradiction to maintain that, even in the interests of mental cultivation, proper weight must be attached to the preservation of perfect bodily health and the proper exercise of the senses; and inverting the case, if the body is neglected and the senses are permitted to become incapable of being the transmitters and mediators of mental life, this last must suffer terrible injury.

This habit of observation—the constraining the mind to be always on the alert—is a most important effect of work-instruction, more important even than the exercising of the *dexterity of the hand*. Not that this is to be undervalued either; whoever knows how clumsy most scholars are and remain, through want of exercise; whoever reflects that this general unskilfulness is only increasing in proportion as the industries tend to make life pleasant, and even more, that the small mechanical works are being taken out of the hands of the scholar, will wish that some compensation should be found through some means specially bearing upon this state of things; and such a means is the work-instruction. The scholar of to-day no longer covers a single book—the covers are already given to him ready made; he never thinks of stitching and covering his copybooks; he rules no more lines for himself, they are already printed for him; even the sheets of blotting paper are sold neatly cut for him; it is almost as if the boy no longer needed any hands; and in the same way instruction is applied as if what exists of the human creature besides the brains were merely a disturbing and unnecessary addition. If it really is the office of the school to train the human creature, to develop the faculties bestowed upon him, just as a gardener helps his plants to develop into what they are capable of becoming through his care—if training is not to be so managed as that certain parts of human nature shall be artificially encouraged and others stunted by neglect, just as if one were to break off the flowers of the tobacco plant in order to force the productive power into the leaves; we are justified in demanding that, in the culture of the understanding, the exercise of the hand shall not be neglected. One would not think that it would often be necessary to point out the importance of the hand to human creatures. If one comes to reflect that most people live by the work of their hands, it seems strange that an institution which watches over and guides the development of human beings, should be open to the objection that it allows this important instrument to remain comparatively undeveloped and disregarded.

It is seen at once here that work-instruction is especially necessary where a counterpoise to the preponderating influence of mental employment is required. Therefore the upper schools need the supplementing of their instruction by practical work more than the public schools; indeed, in comparison with the pupils of the upper schools, the scholars of the public schools show themselves the more handy. Here and there they are employed in household tasks; instruction does not entirely absorb their capabilities. Of the two kinds of upper schools the work-instruction would be more advantageous to the grammar-school, because here instruction in language is a prominent subject; and this, however important and indispensable it may be, from its very nature renders the scholar disinclined to use his powers of observation. And this supplementing of the instruction in language by practical employment will be so much the more to be desired when the grammar-school has not yet adopted drawing as an organic subject of its plan of instruction. The necessity for exercising the hand may be shown by an example. Is it not astonishing that the young medical student, in accordance with the training he has received, should only be required to give the first proof of his dexterity when the dissecting scissors are put into his hands in the operating hall? And this is done just where so fine and so secure a mastery of the hand is presupposed! Just imagine yourself beginning anatomy under these circumstances. Before now how many must have seen themselves obliged, by their own want of dexterity, to renounce a profession for which they had otherwise the strongest inclination? Is not the truth of the saying proved here that "He who would master a subject must begin early?" It is not intended to insinuate by this that the preparation for the future vocation should be taken up by the school. I wish particularly to impress upon you that the exercising of the hand is demanded as an organic part of the training of young people on general educational grounds; otherwise it must always remain incomplete.

Another gain for pedagogy through work-instruction is the cultivation of the *sense of beauty of form*—the development of *taste*. Here, too, practical employment goes hand in hand with drawing; the one subject helps to strengthen the other. And who will deny that the strengthening of the moral element in the present system of instruction is a very wholesome thing? In

reference to this, too, the pupil of the gymnasium gets the most good, because here practical employment compensates for the want of drawing. That there exists here a deficiency in the plan of instruction adopted at the gymnasium is clearly shown by the fact that from an entirely different quarter the demand has been made that art shall be used in connection with the study of the antique and classical literature. Indeed, to attempt to gain a general idea of antiquity—say Grecian—would be impossible unless the eye had been trained to appreciate the beauties of Greek sculpture and architecture. But an education in taste is not needed only by the scholars of the gymnasium, but by every young German. If in art we are not only behind contemporary nations, but behind our own past, is not the greater part of the fault the consequence of the preponderance of our mental cultivation over our artistic, of knowledge over action? The deficiencies and failings of a nation are often typified in their system of education.

But work-instruction must not only connect itself closely with drawing; it must utilise and serve the other branches of education. This is a point which must always be kept in view, as it is hardly considered at all in the movement for promoting home industry, much less practically acted upon. It is certainly of the greatest importance to the future of the work-instruction that it should assume the closest relations with the school. This is done whenever it is the means of placing in the school such practical tasks as require the reproduction of the ideas treated of in the course of instruction, and the raising of them into the sphere of direct perception. Unless it does this, if it merely goes on its own way, then it is in danger of becoming mere handicraft-work, in which case an organic union with the school, which ought to be an object of the last importance to it, is rendered all but impossible. This organic connection is absolutely necessary, because the cultivation of the eye and hand is a factor in education, and therefore deserves a place in the general educational scheme. In consequence of the connection of the workshop with the school the subjects for practical employment are drawn from the school instruction. There are surely plenty of these relative subjects; they only require to be sought out. The little botanist becomes a worker in pasteboard whilst constructing for himself a herbarium; the student in mineralogy displays his skill in representing the primary forms of crystals; the geographer brings clearly before the perception the principal features of physical geography by means of the clay he moulds into the shapes of the ridges of mountains, chains of mountains, &c. Physics lead to the exhibiting of simple apparatus, such as the camera obscura, fixed and moveable pulleys, archimedean screws, &c. Even mathematics offer objects in the richest profusion. It ought not to be difficult to prove that the inclination of young people for such work is always very strong, and that therefore it is only necessary that actual *things* which at present are not part of the school system should for the future be included. Of course the higher instruction offers subjects for practical employment in a much greater profusion than the public schools, but even in these there are plenty which are relative to the workshops. Subjects are to be found in elementary instruction if they are only sought for.

This demand for the closest union between school and workshop must also be made in the interests of practical work, in order that this may become more comprehensive and more improving. If by this means we wish to train youth, we do not desire to convert the scholars into apprentices. They will bring into the range of their operations varying materials, such as glass, pasteboard, tin, wire, wood, clay, and plaster; they will learn to use different tools and do different kinds of work, which will contain the elements of the most different descriptions of skilled hand-work; they will plane, saw, file, bore, &c., in turn. It would be quite preposterous to drill hand and eye from an artisan point of view. If this is carefully avoided work-instruction is protected from isolation, and therefore from the very thing by which earlier attempts have been frustrated.

That this exchange does good service to the school is easily seen. From the workshop would be brought in a great deal of interest, and with it understanding also. With what different eyes does the scholar, who has learned how to make his holiday journey from the map, look at the map on the wall in class, which before this has often seemed to him only an instrument of torture. So, too, the boy who has worked out an octagon in pasteboard has during the mathematical lesson a much better comprehension of its character than another who has only seen it drawn on the blackboard. What he has worked out for himself is his own doing, and the instruction which this subject of interest must serve as a help to will not have to complain so much of defective memory and dislike to the work. Is not the boy completely transformed who begins to manifest a living natural interest in instruction? It is just as if his whole mental life were illumined at one stroke; and the flame thus kindled will never be again extinguished, but will be ever renewed by the new mental acquisitions, by the new questions which arise and must be dealt with. The boy no longer approaches knowledge only as a duty; his activity is now *spontaneous*.

And the pleasure in spontaneous action is a valuable effect of practical work which ought not to be undervalued; it makes the boy, as far as in him lies, productive outwardly with his hand and inwardly with his thoughts. What a pleasure and what a spur to eager activity it must be to the boy to see what he is at work on visibly making progress! That is an advantage which all bodily work has over mental. Whoever remembers the rapt attention with which he, as a boy, watched the work of grown-up people will be able to understand the pleasure a boy feels in seeing the progress of his own work. It would not be difficult to procure written proofs, taken from the personal experience of tutors, that the same boys who on finishing their school tasks of an evening were so weary that they were obliged to go at once to bed, on other days could hardly be torn away from the saw or pasteboard-work, because they had conceived a perfect passion for their work. Thus the boy gets a double pleasure out of his work—first in watching its progress, and then when it stands completed, and the object which at first only floated before his eyes as possible of attainment is now before him a finished work, the creature of his own labour. How entirely different from this is the sensation experienced by even a very good scholar who has translated his lessons remarkably well. It must not be supposed that he says to himself that by this he has gained a distinct step in his mastery over the French language. What he feels is the sense of contentment at

having done his duty, and finished with his school work. This joy in one's own productions is greatly to be regarded as a force in the formation of character. And is the self-reliance thus engendered, and the happy consciousness of having created something, not to be considered a gain? It is *the man himself* that is made by it. This is the great thing to be considered; one will find its use quickly enough in school life. Will a boy who has learned independence be contented to live on others, and enrich himself at the expense of strangers? Every teacher knows how difficult it is to battle against the scholars prompting one another, against exercises being copied, or their being compared together. Now, the effects of this self-reliance will be traced here. The gain to the character which results from work executed by the boy himself is seen in every phase of the boy's school-life. The reports of those schools in which work-instruction is incorporated into the general system proves this. It is particularly wished that one point should be brought under notice, and that is that, since the pupils have rejoiced in their ability to achieve independent work, their behaviour is decidedly better; they are more responsible, more in earnest.

On all these grounds work-instruction is worthy of our best consideration. We have spoken so much the more fully because we have to combat the opinion entertained by some, that the notion of the scholars' workshop was a mere whim which had no real bearing on the system of education.

After what we have heard we are justified in saying that work-instruction is a necessary adjunct to the schools, inasmuch as it trains the eye and the hand, and renders impossible the one-sided cultivation hitherto adopted. There will be a greater harmony, more just relations between the scholars' capacities and the performances which are expected from them. That this will have the most beneficial influence upon the bodily and mental well-being of the rising generation is already clearly proved by the gymnastic instruction. Compare for a moment a class which has been enjoying an hour's gymnastic exercises with one which has gone already through four hours of lessons in the morning, and is just setting about to prepare for a fifth. It is an acknowledged fact that after a prolonged effort in one direction it is a refreshment if one is allowed to employ one's capacities in another. It is not absolute rest that is required, but change. It is on this account that the change of subjects is set down in the hours for study. But how much more refreshing must be the change from bodily to mental exertions; between mere passive receptivity of learning and free self-reliant work; between the rest of the body and having it in active motion. A beginning has already been made through gymnastics. But what are the two hours spent every week in the gymnasium to the other six-and-thirty working hours to a third-class boy who receives private lessons in addition to school, and has to prepare his school tasks besides? Surely the favourable results which have been arrived at through the gymnasium will serve as helps on our road. We may here be permitted to give an authenticated instance of the value of the refreshing change of occupation of the scholars from a quarter from which we hardly ventured to expect it: from a school in Paris. Ernest Legouvé made a speech a short time ago at the distribution of prizes at the "Monge" school on the various educational systems, in which he made the following statement respecting the "Tournefort" school: "I discovered the Tournefort Street behind the Pantheon, and approached a house, the exterior of which attracted my attention. Let us enter. It is an elementary school. At the first glance there was nothing remarkable to be seen: children at their desks: maps on the walls. That is what one sees everywhere. It strikes 12 o'clock. All the children stand up. Where are they going? To play? No; this is not the time for that. They hurry into two or three workshops for joiners' work, locksmiths' work, modelling, wood-carving. What does this mean? The scholars are become workmen. In place of a pen in their hands they now hold the saw, the foot-rule, the plane, and the hammer. Instead of dictation they make tables, forms, little cupboards: only what can be of use to them comes out of their hands. Then we hear another bell sound, and back they hurry to geography, to history, to arithmetic. What do you say to this union of intellectual and manual instruction? Is there nothing to be learned here? Do not imagine that I follow in Jean Jacques's footsteps, that I wish to make joiners of you, so that in case of a revolution you may be able to earn your own living. The rough life of a workman needs a far different, a rough training. But is it not necessary to combine instruction of the eyes with that of the hands? . . . . and further, the training of the fingers in the Tournefort school does not stop at hand work, it goes straight on to art. Children model in clay and carve in wood all sorts of ornaments for architecture and cabinet work."

Finally, work-instruction would afford a means of discovering latent and unsuspected talents, and so far encouraging them by fitting games as to develop, first, a serious inclination, and then the decided liking which a man feels for the calling he chooses. How often has the teacher to listen to complaints from the parents that their son does not know what he should like to become! Yes, but generally speaking the school is only in a position to give information respecting the mental capability, the industry and attention and behaviour of the scholar. It is not supposed to exercise any kind of supervision over the general disposition of the boy. The instruction does not give a scholar any chance of developing his whole individuality; so that it is impossible for him to learn to know himself in school. By means of the school-workshop these possibilities are greatly increased. It would be easy to bring forward examples of great artists who have been made artists by practical employments given to them in their boyhood. But it is not only a love of art that the scholars are likely to get from the scholars' workshops; they will most likely acquire a much deeper affection for hand-work, and a glance at the condition of our handicrafts will show whether this is needed or not. One set of men think too much of themselves to become artisans, and wish to be merchants or clerks; others want to earn money at once and to work in a manufactory. Skilled hand-work, formerly a subject of such pride in Germany, has fallen into disesteem and is neglected. False prejudice on the one side, greediness of gain and self-indulgence on the other, have brought honourable hand-work into thorough contempt. If many boys are won over by the school-workshops to love work; if sensible parents are taught to see that their sons will do better as free and able artisans, who take a pleasure in their productions, than as dependent, ill-paid sub-officials, that during the years of school-life, when of course nothing can be earned, it is better to acquire something

solid than to go straight into the manufactory, where, it is true, money may soon be obtained by mechanical works—money which generally is soon squandered; if the parents are taught this by the school-workshop, it is a result which ought not to be despised. Instead of the artisans fearing a rivalry from the school-workshops and opposing it, they should support it with all their might, for it really does not train a scholar to any particular trade (in most cases this would not be desired), but aims generally at rendering the pupils apt and skilful. Even those scholars who do not eventually acquire any personal liking for hand-work, at least will learn what pains and industry go to the perfecting of a really good piece of work. They will learn to regard an artisan with different eyes from those with which they are looked at by the so-called cultivated classes; they will learn to distinguish between a good workman and a bad one, and thoroughly to respect an honest capable handicraftsman. If this were accomplished one of the gulfs would be bridged over which so sadly divide our social life.

If these considerations appear to decide us to put our hands to the work, there are, however, not wanting arguments on the other side. It will be urged that the present system of education has, without this new movement, already a tendency to estrange the child from his home and family, and that nothing ought to be done to increase this tendency, that home is the place and the father the best teacher of such practical skill. To meet this it must be made evident that the ties of family life ought to be strengthened by every possible means, and that what is intended by work-instruction is only a supplementing of work which ought to be accomplished by the family. But what if the family does nothing towards this? How seldom has the father of to-day, especially in the great city, time to give to his sons' employments. If he, tired out with his day's business, has any leisure time, does he not spend it in his own recreation rather than in instructing his children? and even if he had the time and inclination, does he possess the necessary skill in hand-work and the indispensable amount of patience? It is no question of those children therefore who have splendid opportunities at home and the best of instructors in their father, being alienated from family life, but of giving to those who have neither the best substitute for both. It may confidently be asserted that work-instruction operates indirectly in favour of family life. When a generation has arisen which possesses more skill of hand than the present; when the hand skill which has been destroyed by the enormous multiplication of cheap manufactured articles comes through a concurrence of favourable circumstances to be gradually restored; then fathers will be found who, when the family is gathered round the lamp in the evenings, will give their children instruction in practical work.

Another objection that will be made is that we ought not to curtail the time the children have to themselves by instruction in work; that they ought to have this time at their own disposal. To this it may be replied that it is of far more importance to afford the boy an opportunity of employing himself with some work that he likes, and which serves to develop his individuality, than to let him dawdle about and have all his faculties narrowed. Certainly practical work, if it is to be a training, is no mere play, does not admit of trifling; but on the other hand it is not severe work in the sense of artisans' work, and the instruction given in this differs from the instruction in school. It is not exactly handicraft work, neither is it according to school rules; or it may be said to be both together, only voluntarily undertaken, and carried on with pleasure. The scholars' workshop is intended to provide tools and guidance for those scholars who would willingly fill up their spare time by working at practical work, but would not otherwise be able to do so. There are certainly a great number who, rather than read books or play any kind of music, would spend a couple of hours with hammer and tongs, chisel and gimlet. To these a helping hand will be stretched out; they shall not be overburdened with work; they shall not be robbed of their freedom, only taught how to get real enjoyment out of it. That this point is not often understood by scholars is shown by the combinations for resistance among the boys so much battled against, and so difficult to root out in the upper schools.

A third suggestion made in the interests of the public schools is that when once the cause is set agoing and fresh school rules are passed respecting it, it should be left to work its way slowly, without any attempt at new reforms. It must have rest for a time in order that the new institution may have time to take root, and to acquire a firm standing. The public schools are pestered enough with new suggestions without this, suggestions which they are constantly obliged to parry—for example, a demand for the introduction of legal instruction, and another demand for instruction in the elements of political economy. This demonstrates that care should be taken not to make fresh demands on the schools, even though they should be just in themselves. In reference to the first of these points it should be remarked that the demand for training of eye and hand is not at all a new one, but rather already pretty old; it is a constantly recurring one, and will be so until it receives due consideration. With the request for the introduction of legal knowledge and other similar claims it has nothing in common. They are essentially unpedagogical, for they would anticipate the future vocation, and would assume to prepare for special branches rather than give a general training: this is wrong. But the cultivation of eye and hand belongs to the general training of the human creature. Finally, as to the fact that the public schools must be permitted some rest; this can only come to pass through the organic union of work-instruction with the public schools. This is not demanded as a thing to be accomplished all at once, and it may yet be a long time before it really comes to pass. At the present moment it would be impossible; there is not a sufficient teaching power; neither is there as yet any special method known which has stood the test of experience. The public schools are only asked now to allow a department to be formed in their vicinity, which at some future day may do them good service. For the rest, it is not by accident that the question of education in work has been revived just at this time, and has met with such active sympathy amongst us, citizens as we are of a great empire, and wherever our horizon extends beyond the boundaries of home, away to the limits of the whole vast fatherland—aye, even across the wide ocean, to the farthest regions of the earth. Are we not filled with pride to see that the time is past when Germans lamented their wretched political status, their want of political influence

in the council of nations, and were pained to know that they had acquired the *soubriquet* of a nation of thinkers? And if we regard our position among the nations striving for emulation, the conviction comes to us that it is necessary not only to philosophise, but to act; and that it is not only the understanding that is developed by proper training, but the will and its agents. So much is certain, that every great national movement has always included the schools in its influence, and against such mighty currents the cry of the school, "Disturb not my routine," passes unheeded.

Whilst these objections have no power to draw us away from the road we know to be the right one, still we must not shut our eyes to the difficulties which really have to be overcome. These obstacles are placed in our way by the public schools and the upper schools. In reference to the first-named, the work-instruction is disliked by the parents of the scholars, who wish the children in their free time to be employed on some household tasks, to help in business or craft, or even to work in a manufactory. The efforts made to lay claim to the child's time are not made through poverty, which might compel them, but far oftener through the striving for gain; for even parents in easy circumstances often make money by their children's labour. It is not to be denied that this circumstance is a considerable impediment to the training of the public scholars who, on account of school making fewer demands on their time, were otherwise the easiest to win over. If we have to bear the loss of these voluntary participators, to lament the lost hope of giving new life to the artisan class, this is still no reason for letting the cause fall through. It is to be hoped, first of all, that a few sensible parents may be won over who have some idea that it is their duty to educate their children as well as they are able. If this is once accomplished it may be reasonably hoped that the example may spread farther and farther, and that a better understanding may slowly gain ground. Against pressing want and against the unconscientious using of their children's strength by parents we frankly own we can see no means of defence.

Of quite another nature is the difficulty which has to be surmounted in dealing with scholars of the higher establishments. This is, of course, the much spoken-of overburdening. This has been often discussed, and yet here we cannot avoid bringing it up; opinions on this subject must differ so long as so many differing factors have to be taken into consideration which depend upon individual circumstances. The capacities of the individual boy, the kind of home life he leads, the distance of his home from school, his physical constitution, the scholar's fitness for work, the character of the teacher, and many other things have to be taken into consideration as bearing on the question. Therefore we shall only succeed in arriving at an objective opinion on the subject of overburdening through a continued and extensive comparison of numberless school statistics. So long as this question has not been finally solved, one can only fall back upon personal convictions. If such a system of overburdening really exists, then it is the duty of all those who believe this to do battle against it; for those upon whom it bears so heavily find its pressure hard enough, but they accept it as the inevitable condition of school-life. The man's judgment of his past life at school is not given until late in life. If it is worth while to listen to personal opinions there would be no difficulty in finding teachers who openly declare that, for their part, they believe the scholars of the upper schools to be overtasked—especially those of the middle classes. As this may be looked upon as a prejudiced opinion, it may give place to the judgment of impartial observers. We may be permitted to produce here such objective proof. The German Association for the care of the Public Health approved the following theses on the 2nd November, 1877: "First, the present system of instruction operates in different ways, especially by a too early and too severe exertion of the childish brain and a corresponding repression of muscular activity; this is injurious to the general development of the bodily powers—most of all to the organ of sight. Secondly, it therefore seems desirable to lessen the amount of lessons, the daily hours of instruction, and the household tasks; also to try to bring about a more harmonious culture in which the personal individuality has its just claims acknowledged." At the sitting of the Prussian Chamber of Deputies on the 23rd and 24th November, 1877, the present Minister of State (Dr. Lucius), amidst the general approbation of the House, spoke as follows on the question of overtasking scholars: "If Mr. Deputy Lasker means to say that it is perfectly possible that children of from nine to twelve years of age should be able to keep up the mental strain for five or six hours every day and attend well to their lessons, and besides this spend from two to four hours in household tasks, then I answer that this involves so great a mental strain that the physical development of the whole youthful body would be hurt by it, and, as I believe, is already prejudiced by it." From authenticated documents in the Prussian Statistical Bureau it is quite clear that out of 17,246 young men examined for military duty during a period of five years, who had a right to the one-year service, at least 80 per cent. were physically incapable, whilst of those reported ready for duty in the same space of time 45 to 50 per cent. were declared ready for partial duty or altogether unfit for duty. The results of the statistics in short-sightedness afford most striking proof of the reality of the overtasking system. In and round Breslau the results of Dr. Professor Köhn's investigation in 1866 showed that in the village schools the shortsighted children amounted to 1 per cent., in the elementary schools in the town 10 per cent., in the School of Art 20 per cent., and in the gymnasium 26 per cent. In the gymnasium the following results were obtained by investigations amongst 1,195 scholars: VI., 12 per cent.; V., 18 per cent.; IV., 24 per cent.; III., 41 per cent.; II., 41 per cent.; I., 56 per cent. In the School of Art (or high schools), amongst 1,141 pupils: VI., 9 per cent.; V., 16 per cent.; IV., 18 per cent.; III., 25 per cent.; II., 27 per cent.; I., 34 per cent. Dr. Von Hoffman, Wiesbaden, found (from VI. to I.) out of 256 grammar-school boys 19, 24, 26, 32, 50, 58; Dr. Kruge, Frankfurt (on the Maine), amongst 203 grammar-school boys 4, 20, 28, 35, 55, 65. The physicians Lohring and Derby examined 9,265 Germans, Americans, and English, and decided that of Germans in their sixth year 10 per cent. were shortsighted, Americans and English four. When they reached the age of twenty-one the percentage of Germans was sixty-three, of the last two twenty-six. Wiese finally reported in his letters on English education that he had not seen any scholar in England wearing spectacles, whilst with us it is no rarity to find scholars of the third class wearing spectacles. The most important testimony to the hurtful influence of mental overstraining is brought forward by Dr. (med.) Haase,

Director of the Brunswick Asylum for Mental Invalids in Königslutter, and is as follows: "Let us first of all look more closely into the present system of education for our children. Is everything going on in the right way there? Or, rather, is there not something to be blamed here for the nervous constitutions of our day? I must here state the fact that I have had during the present year alone to treat six young gymnasts of ages varying from fifteen to eighteen for mental disturbances, the consequence of overstrained mental efforts. Whoever has been so situated that either he has of himself, or he has been compelled, to over exert himself mentally for some considerable time —and I am afraid the number of these is very great—will agree with me that such one-sided constrained activity exercises a most hurtful influence on the nervous system, and especially upon the disposition and temperament. And if I am asked if our young men really are overworked at the gymnasium, I must answer the question with a most decided "Yes." This is proved beyond a doubt by the number of young people from the gymnasium who—some of them possessing excellent talents, some of weaker intellect, and some of average abilities—have all had to be under the doctor's hands for mental disturbance produced by mental over-exertion. We are not speaking here of any one particular case, but of a long list all from the same cause. This argues that there must be something wrong, too, in the school arrangements. It is not in the plan that young people should be compelled to spend several hours a day in household work besides their school hours. More than this it is not in the plan that the schools, in the execution of their duty in bringing up young people, should confine themselves to their mental cultivation only, and neglect to bestow the necessary attention on their bodily development."*

In any case the first point to be insisted on is that not for a moment ought the idea to be entertained of making work-instruction an additional item in the existing plan of studies. If it is not possible to lessen the amount of mental work at present required from the scholars—if it is not possible to make people see that the proper task of the school is not to bestow on the scholar a wide and compendious amount of knowledge to take with him on his entrance into life, but rather to secure that he shall become imbued by dint of his own hard work with the spirit of the educational element in knowledge, and then to awaken in him the wish to strive after wider knowledge—then, indeed, an introduction of work-instruction into schools is not to be thought of.

If we go more thoroughly into the causes of the deplorable overtasking system, it will be found that one of the most important factors, especially among the middle classes, is the system of scholarships. This matter cannot, of course, be thoroughly sifted here; it must suffice that we touch upon it.

It is, however, now pretty generally acknowledged that the granting of free scholarships for the upper schools, although to outward appearances successful, has really worked badly; the crowding upon them of a mass of scholars not gifted with abilities equal to the demands made upon them does not serve the purposes of the higher schools, and is besides hurtful to the scholars themselves, who would have profited so much more by a longer stay at the public schools. And so it comes to pass that the upper classes of the public schools are thinned by their losing so many of their scholars, who go to overcrowd the lower and middle classes of the higher schools. They stream into the Gymnasium and Lower School of Art, and here they make life a misery to themselves, to their more capable fellow-scholars, and to their teachers; for there is all the difference between working with a due proportion of scholars whose attainments are up to the school standard, and struggling to keep up a host of ill-qualified pupils to the level of their class.

The greater part of those below par of necessity remain stationary. If, however, their want of ability and industry does not reach this point, it is with infinite pain and trouble they keep a place high enough to enable them to obtain an exhibition. Upon securing this they leave the place of their torment with an incomplete education, consisting entirely of beginnings all referring to the future, for they are all broken off in the middle. These second-class pupils, who have attained their high places so laboriously, belong to the army of the half-educated, which is so large that it is almost the characteristic of our times. They form its largest contingent. With regard to the higher institutions it is a great pity that a large proportion of their students are lost to them and to their reputation as training schools, and they become instead preparatory establishments for volunteers (Freivilligendienst). It is much to be wished in the interests of all concerned—for even the army cannot be well served by such half-educated beings—that this should all be changed, and it is absolutely necessary that in making a change in the existing system of scholarships this too should be altered.

Let us sum up the results of what we have been saying, so that for the sake of its high pedagogical value, practical employment may be included among the means of education. In advocating this we have to contend, in the case of the public schools, with the practice among parents of making their children work for them; and as to the higher schools with the overtasking system. There is besides a want of teaching-power for work-instruction as well as of a well-ascertained method both practical and theoretical; so that we have a twofold task before us. First, there come the hindrances which stand in the way of the training for work; these have to be removed, then the training itself has to be organized. Which of these is the more important task? Which shall be first taken in hand? The answer seems simple: to do the one, and not to leave the other undone. Perhaps it is exactly in work-instruction that we shall find the lever which shall avail to move the whole mass of general instruction. It is certainly the more practical course, instead of groaning over the overtasking system, at once to provide means for relieving it; and to say, "Here is a something which will go to fill up the gap in our present scheme of education, and place must be found for it in the schools." That place shall be found; we will separate the essential from the non-essential, whilst we liberate the schools, to the great improvement of their teaching-power, from many a "qualm of knowledge." This will certainly be the occasion of a great conflict, the end of

* Newspaper for the Higher System of Instruction, Nos. 35 and 47, 8th yearly vol. In some remarks by the editor, the opinions which were directed against the system at the grammar-schools are made to apply also to the Real-schules.

which will not soon come. Are we to be deterred by this? Many are doubtful; they think the idea good, and the introduction of work-instruction greatly to be desired; but they are unwilling to change the present organization of the schools. Is the present school system not a thing of the past? is its development already finally completed? If the school system of Sweden, which is acknowledged to be a model, and which certainly grants larger powers to the school authorities, has allowed work-instruction, why should not we believe the same thing to be possible with ourselves? With what powerful obstacles have not gymnastics contended? To what persecution were their advocates not exposed? And yet it is to-day a recognised means of education, and the gymnastic hall has become a necessary adjunct to every school. It only needs a hand to be put to the work. If the idea is a sound and a healthy one it will win its way at last in spite of everything. Already, in its enduring vitality and its revival after it had appeared to be completely forgotten, we have a warrant for its worth. We must indeed have patience until the fruit ripens; and we should do well to be on our guard against the errors and mistakes of the past. Before we have cleared away the hindrances in our path and laid a foundation for a sound method of work-instruction, its introduction into the schools is not to be thought of. The thing to be done, therefore, is to proceed by way of private enterprise. We have at the same time to do battle with the overtasking system, and to train teachers for work-instruction, and to arrange a systematic plan for carrying it through. Then in a private way also, school-workshops must be established for voluntary participators in which an opportunity shall be given to them during their leisure hours to exercise the eye and hand in such practical employment as is connected with instruction. Here, again, we shall collect both observation and experience, and perhaps be able to awaken in a wide circle both an understanding and a taste for the school-workshop. And if once scholars leave it who have gained by its means a quick sight and a dexterous hand, and who have there become apt, skilful, active, and capable men, then will be the time to point to the results of our work-training; and then perhaps the time will come when the school doors will everywhere be open to work-instruction; and beside the drawing hall and the gymnastic saloon, a third will come to be added—the school-workshops. Then shall shine in bright letters over the door "Blessed be cheerful work."

APPENDIX III.

EXTRACTS from "Proceedings of the Congress for Instruction in MANUAL WORK and Home Industry held on the 3rd June, 1882, in Leipsic; together with a Report of the Exhibition of Work done at the School Workshop in connection with it. Compiled under the supervision of Dr. W. Götze, Secretary to the Local Committee. Gera: Published by Iszleil and Reitzchel, A. Reiservitz and W. Fürst, 1882."

Professor Dr. Biedermann: Honoured friends, in the name of the local committee of this day's congress for promoting manual instruction and home industries, I have to bid the meeting heartily welcome. Next, I greet with joy the members from a distance of the central committee constituted in Berlin last year for this important occasion. And to this pleasure I must add the sorrow with which I observe that so many of the most esteemed and most zealous members of the central committee are prevented by illness or other hindrances from being here to-day. With no less pleasure do I greet the great number present from this city. I believe that, if not already won over as friends to our cause, I may still venture to hope that you will look at the question impartially and without prejudice; and it is perhaps not too bold a hope to which I here give expression that through the present meeting, and still more, perhaps, through that which we may be able to offer you, you may be brought over to our ranks. Lastly, with a peculiar joy and with sincere gratitude we greet the two gentlemen who are here on an official mission from Dresden; and we count it a great gain to our cause and in the highest degree a cause for gratitude that the two great Ministries of Worship and the Interior have not disdained, on our respectful invitation, through special commissioners to take part in the ceremony. We discern a substantial advance of our cause in this kind interest which shows itself from so many places. In conclusion, honoured gentlemen, I must apologise on behalf of our local committee for some inconveniences in our place of meeting. As you see at this moment, we have both the dazzling light and the darkness. We were unfortunately not in a position to command all the advantages of the Central Hall; and our exhibition, which is almost as important as these meetings laid claim, to the Emperor's Hall. Gentlemen, it only remains for me, in accordance with custom and the requirements of the law to call upon the meeting to appoint a chairman for each particular department.

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Herr Lammers, of Bremen, spoke as follows: Gentlemen, in June last year a number of friends of instruction in manual dexterity and home industries met together in Berlin, induced principally by the presence of Mr. von Schenkendorff, from Görlitz, and prepared as to ways and means to procure a further hearing in Germany for our common cause. From this assembly proceeded, as you have already heard, a central committee, which appointed a working committee, with its seat in Bremen; and in the name of both the central and the working committee I have now the honour of making a report. We have no very comprehensive and no very definite results of our activity to unfold; nor do we wish to do so, for we are of opinion that this is not a reform to be benefited by, or which would even endure, stormy and vehement agitation. We would much rather that the men who are willing to devote themselves to its introduction into and extension in Germany should set themselves to the task through practical demonstrations, through experiments, the results of which must in the beginning naturally remain uncertain; and, moreover, by taking opportunities for the discussion of our cause both by speeches and writings, and of seeking to make known our ideas to an ever-widening circle. It would thus be able so far to stand alone that it could adapt itself to the necessities of the case, and assume in separate localities forms which may be in the highest degree different. . . . The operations of the committee have not been very extensive, and cannot boast of great results; but we have already had the feeling to-day, in the pre-

liminary sitting, and I believe that you will all share it, that the cause has made good progress, a progress corresponding to our wishes. It has not been our design to take the German schools by storm, nor, by insinuating our idea through all kinds of influences and authorities, to overturn the whole order of public instruction; but our wish has really been, so far as the present means of intercourse allow, besides the degree of community in feeling already attained among the German people, to plant trial stations thickly and widely as far as possible over the whole of Germany. From the attempts and results of these stations we should be able to lay impartially before the public, and discuss in a fitting manner, the art of teaching, and obtain, so to speak, a finger-post for the future. Then, the schools and managers of schools, the teachers and the parents of the school children, can judge for themselves how the course affects them. We have the conviction—otherwise we should not trouble ourselves about it—that in this cause there is not merely something, but, indeed, a great deal, and, if it be not saying too much, not for one only, but for all. This conviction is not in our case the burning jealousy of fanatics, so easily chilled and extinguished by the surrounding cold waters of indifference, but the earnest and consistent efforts of men who know that such innovations, if they are to naturalise themselves amongst us, must be the result of slow but certain conviction. In this spirit have we up to this time addressed ourselves to our task. We shall do well in the future to further it in the same spirit.

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Dr. Götze, of Leipsic, said,—Before I attempt to explain the different forms which the idea of the work-school has assumed, taking for my basis a short statement of the point of view from which the Leipsic school-workshop is conducted, I may be permitted, for the benefit of those of our honoured guests who now for the first time are present at our deliberations, to say a word in a short and introductory way on the history of work-teaching, and thereby dispose of the widely-spread assertion that the idea of the work-teaching is specially northern. If we were to represent this case as if Germany, urged on by Denmark and Sweden, had now for the first time taken the matter in hand, then we should be going against history. Robert Riszmann, in his valuable paper, "History of Work-teaching," points out that the pedagogical realistic movement of the seventeenth century, through its chief representatives Ratke and Amos Comenius, first directed attention to the importance of manual work as a means of instruction. I have it from the mouth of Captain Clauson von Kaas himself that he first represented the cause at the Vienna Exhibition in Germany. We possess, moreover, in the book of our Professor Biedermann, "Education by Work," a reference to the pedagogical value of work-teaching of the year 1852. So that this idea was pointed out thirty-one years ago in Germany. Further, you will find in the exhibition work from the educational institute of Beust, in Zürich, that demonstrates how class instruction in practical work can be re-established; and that has been going on there for thirty years. The work-school of the little town of Salzungen, in Thuringia, has sent its work to us. This was in existence in 1840. The educational institute of Barth, and Ziller's training-school for students, are also living witnesses that the idea of a work-school is not now imported to us from the north as an entire novelty. Riszman has wrested out of the hands of our opponents the weapon consisting of the assertion that what we are asking for is something utterly unknown and unheard-of. This must not again be asserted; our rivals must now contradict themselves, and say that the idea of work-teaching was in Germany for a long time crushed and suppressed. But, in reality, the cause is not suppressed, as is made clear by the present assembly, and the exhibition displayed in the Emperor's Hall. The exhibition has been prepared for by all Germany, and Switzerland too has taken an active share in it; yes, we can promise our rivals that the movement will not be suppressed so long as there is any care for the education of the eye and the hand. So long as the intellect is chiefly educated—that is, reliance is placed on the memory alone, so long it may be allowed to point out that the child has senses as well, and that the right way to the childish mind is through the senses. We base our demand for a gradual introduction of work-instruction upon the fact that mankind have hands and eyes, and that, if one wishes to educate the whole man, these also must be brought within reach of the teaching. Most men live by their hands. The soldier in the field is dependent for his life upon a practised eye; the cultivated artist, the operating surgeon, are entirely dependent upon the schooling of their eyes and their hands, and in the world's market the ablest and best work wins. We must bring ourselves to acknowledge the fact that the schools are not for themselves, but for the purposes of practical life. Thus, since 1873, the question of education in work is brought up again in Germany as an order of the day. It was until then kept back behind other weighty political questions. To us it comes next in importance after the building of our house—the house of our fatherland—which now stands so stately. While we had such a work to accomplish we could not trouble ourselves about individual questions, however weighty. Now, however, that the house is up, we can attend to the internal arrangements. We may even venture to look after the children's apartments. Now the old plans and projects come to light again, and now we fall in willingly with the ideas which are coming to us from the north. That they should fall upon so favourable a soil arises from the fact that our horizon is widened—that we are beginning to value men not alone for their book-learning, but also for their practical ability; and moreover, that our cultivated classes of society are finding themselves face to face with the necessity of practically enlarging their mental horizon and supplementing their great knowledge by practical skill. Work, therefore, is continually knocking at the school-doors, craving admission as a means of educating ordinary ability; and at last there shall be said to it, "To whomsoever knocks, to him it shall be opened." We have not now to establish the system of work-teaching. The question is no longer "if," but "how?" Those who wish for more information about the road by which we have travelled, I must refer to the space in the Exhibition, in which will be found the literature on the subject. I now pass on to my report upon the Leipsic school-workshop. Allow me, in the first place, to tell you what the Leipsic school-workshop does *not* wish to be. From what it is not we shall naturally arrive at what it is. We shall call into existence no new business

institutions. We put aside every consideration of gain or earning money through the saving and preserving power of work. It is not our object to redeem from savagery boys undisciplined and neglected. I wish especially to have it understood that I do not set myself against these objects; they are undoubtedly rich in blessing, but we will not begin by mixing up together diverse purposes. Perhaps a further step in this direction will follow later. The matter will then be indeed more difficult, because there the difficult question comes in, but even this difficulty is surmountable, it is even already overcome in Dresden, and in other places besides. Whoever has had to do with the poor, knows that the education of the poor must be through work. By labour it is that the proletarian youth must be reached. Only such poor as will work are accessible to moral influences. The lazy and those who shun work are the great burden upon the overseers of the poor, and if we draw a comparison between the poor youth in Voightland, in the Erze Mountains, on the one side, and the child-population of our great cities on the other, it must be said that a great mass of useful helping power remains unused and lies fallow. I am not in any way advocating one of those mind-stupefying manufactory-ordered works for children, but the leading up to business habits—the incitement to save—most decidedly valuable in a double degree to education. Many a rough action would be left undone, many a piece of wildness checked; besides this, many young fellows now knocking about without any control might have been brought up to habits of industry and economy if they had been shown how to save money earned by their own labour. I am firmly convinced that the sum annually spent on the poor might by this means be lessened. If this idea were carried out, presents of confirmation clothes and Christmas-boxes would fall into disuse, and the school savings-bank would naturally supply their place. But I repeat that I oppose entirely the employment of weak child-labour in factories. This economic power of work will not directly be brought into prominence. Specific preparation for hand-work has been quite excluded. Parents who wish their sons to be taught bookbinding, for example, I have always directed elsewhere than to the pasteboard course, where the boy's general aptitude for his future calling would be awakened, but nothing more would be gained. We have striven to obtain a formal education of the hand corresponding to the cultivation of the mind. It has often been thrown up to me that I hurry on hand-work prematurely just as they hurry on the soldiers in their exercise school. I decline to acknowledge the parallel. The exercising school does really appear to me to force prematurely the soldierly education of a soldier. It only acts usefully so far as it serves the general purposes of the gymnasium, and as it forms a counterpoise to a one-sided intellectual employment. The school-work has far more its counterpart in the gymnasium. As gymnastics educate the body without regard to the future vocation, so the school workshop will give its scholars an education of the eye and the hand to help them along the path of life. This will be analogous to the general education which the common schools bestow upon their pupils. I cannot but think that in the future no boy should be confirmed who does not take out into practical life with him a certain general skilfulness of hand. The school-workshop does not intend to train artisans—handicraftsmen—it will only aim at promoting the general handiness, educate the seeing eye. The attempt must be made we think to find out in especially suitable materials, as paper, *papier maché*, wood and metal, a methodical and gradual succession of work for the education of the eye and the hand; to represent as it were the A B C of work, by which every young human being entering into practical life must be informed with the elements of general cultivation. So that our school-workshops propose to be neither a prepartion for business nor a real workshop. We simply wish to be of service to the schools, or, more properly speaking, to the educational movement. The educational work which is completed by the home—for that must not be forgotten—and the school, we will supplement until the constituted authorities themselves, who have until now neglected it, take this task in hand. Now I hear the question, How will you begin with the boys? What sort of work will the scholars work at? That is a difficult question, which has been warmly fought over in our circle. It would not serve our cause if I were silent on the fact that different opinions are still expressed. Perhaps the meeting of to-day will do something towards clearing up this question. Some amongst us attach the greatest weight to work for its own sake, not concerning themselves as to the kind of work performed. Others lay the greatest stress upon the kind of work, and think that the class of articles selected for the work should be such as to lead to the acquisition of a distinctly technical skill available for gain. Some wish the boys to learn the use of the plane, the file, the saw, the soldering tools, not concerning themselves further as to whether the articles made are adapted to the home life of the scholars, or their games, or their modes of thought, or their school employments. The adherents of the school-workshop, on the contrary, would only allow, or at all events lay more weight on, such subjects as bear a close relation to instruction, which elucidate instruction, and which interest the scholars from their practical side. You see, honoured friends present, these contrasted views represented in the exhibition below. The Leipsic Exhibition divides itself into two halves. The one is the workshop of the school, the other of the scholars. In presence of these two opinions, which are not yet reconciled, may I be permitted to explain my own view? I might, without making any attempt at compromise, maintain that the two systems of the school-workshop and of the scholars' workshop need not exclude each other. One question I bring to the foreground—that is, the education of the teachers. The perfecting of each teacher must be confined to one branch. It is not a question of finished work, but of the mastery over working implements. Technical knowledge is here beyond everything necessary. The teacher must see for himself that he must stand high above the scholars in practical skill. He must make himself a master-workman. It is not the object to produce highly-finished articles. Then comes the next point, which belongs to it, that the teacher should impart his practical learning to his scholars pedagogically. Now for the scholars. They too must be gradually exercised in certain elementary work before more difficult objects are placed before them. We must be able to plane a flat surface before we can construct an electrical machine. Of course we cannot acquire a knowledge of the details of the construction of a complicated apparatus. But as regards this I might advise that, in the midst of these simple elementary

exercises, work should be placed before the scholars adapted to the amount of skill they have already acquired, and which they should be able to finish for themselves. The exercise of the eye and the hand is our object, the pleasure of the scholars in the gradual onward progress of the work to its happy completion is the means. That does not prevent there being certain preparatory exercises to be gone through which have no particular aim in themselves; but these exercises always have an influence upon the interest of the boy in the object occupying his attention as the attainable goal of his skill. I might illustrate this idea by an example taken from the gymnasium. Some people say we must acquire our grammar from reading. Take the youths at once to authors, then afterwards gradually work out the laws of grammar from them. Others say, "No, before everything grammar; this must be firmly grasped first of all. The thorough inculcation of the elements of grammar is gone through in the three lower classes—the sixth, fifth, and fourth; then, in the upper classes, come the lectures. The scholar does not at all need to know in the beginning of what use grammar will be to him later on." This last plan I will not advocate for the workshop instruction; but rather give warning that, keeping in view the acquisition of the necessary skill, this actual result should be lost sight of in working for the work or object. One must not carry method so far as to weaken the interest. The will of the boy to overcome difficulties must be awakened through his interest in the object which is, in his mind's eye, the aim of his skill. That the first articles they are allowed to finish should be those which are connected with their school life I maintain is necessary on psychological grounds. Perhaps, however, the friends of utilitarianism deceive themselves if they think that boys are more interested in objects connected with the household than in work which their school life brings before them. We shall be obliged to ask ourselves if the interest of the rising generation in these matters is not somewhat confounded with the interest the children take in them. I think that what we must try, with our work, is to enter the charmed circle of children's thoughts. As proof of the correctness of this view, I invite attention to the articles which the School of Art in Leipsic has exhibited. In truth these have been for the most part voluntarily finished in holiday time, and the whole of the objects have grown out of the instruction. If the interest of the scholars for those sort of things did not exist, it would not be possible to present so rich an exhibition as is to be seen below. That is one psychological reason for the choice of pedagogical work material. The other consists in the fact that the present scholars' workshop, in which are working boys of different ages and from different schools in the half holidays is, it is to be hoped, only a preliminary step to the reality inseparably bound up with the plan of having a school-workshop in each school. This is our aim, and we mean to abide by it. If the school-workshop steadily carries on a course of useful efforts, which show their value both in the work done and in themselves, I fancy two opponents will arise to face us—first, the tradesman; and secondly, the teacher. The artisans will oppose, because then indeed a competition would be created, and, moreover, an effective competition, if we reflect that such things would be thoroughly finished in all the schools of Germany. But we shall also have the teachers as opponents, because they can say with justice that this does not belong to the school. The future school-workshop must be well and carefully considered. In this attention to utility lies, in my opinion, the reason why earlier attempts have not succeeded in Germany. They had too little reference to the mental work of the school. We want an organic union of hand-training with the education of the entire human being. In order that this may be accomplished we cannot do without the appliances of the school, and therefore the work-instruction must enter into the service of the educational schools. If the influence of the school is necessary to an education for work, so workshop-instruction, on the other hand, is in a position to render service to the schools. It will help to strengthen the working of intuitive instruction, for it is itself only an enhanced intuition instruction through the self-perfecting activity of the child, and it unites to the means of reproduction hitherto used—namely, the written and oral reproduction of the material used in instruction, a new element—reproduction through practical work. If our school-workshop stands in so close a relation to the school, it endeavours also to come to the assistance of the home through inciting the pupil to little practical works directly serviceable to home-life, and thus to lead on to home industries. The school-workshop stands between both—between school and home. I apprehend therefore the position of the school-workshop is a preliminary and mediatory one. We want to draw the attention of the home to its duty of letting the boys be made skilful. We want also to make the schools mindful of the duty of making use of the eye and hand in the service of mental education. When once that is accomplished we are superfluous, and will willingly withdraw. The office of the school-workshop is this: it will prepare the ground; it will then go on its own way, always keeping in sight the home and the school. These are the main points our school-workshop has in view. As to the method we shall proceed upon, the simple principle is that the difficulty of the material and of the work must be proportioned to the progress of the pupil. We think that the little boy must begin with paper in order to advance to the mastery of pasteboard, and that for boys of the middle classes wood should follow, and for the upper classes metal. This might be supplemented by some work in glass for the sake of the physical instruction; next to these modelling has taken its place with us as a most important object, which brings into prominence the æsthetical side of work-teaching. I hold that modelling is most valuable from an educational point of view, because it is so closely connected with drawing. The four work-courses must, however, on no account clash with each other. The school-workshop must not be split into four parts. They should, on the contrary, form a harmonious whole—a living *universitas laborum*. They should be bound to each other through combined works—works in which all the different materials are employed together. This has been our way hitherto. We have followed it out in a double set of courses. Next to the scholars' courses come the teachers' courses. If I may venture to say a word upon the results already obtained, I shall have to say to you that the teachers' course has throughout been attended with most favourable results. The assertion that the teachers are inimical to the scholars' workshop is most decidedly untrue. The teachers have, on the contrary, manifested the greatest interest, and that not by fits and starts, but throughout the year; and it is perhaps in consequence of this that we have been able to exclude all trade opposition. In

our teachers' course there is such a cheerful working together of hand-work and school that I cannot let this opportunity pass without referring with the greatest contentment to our teachers' course. The scholars' course has not obtained quite such favourable results. The scholars who came to us have evinced a most lively interest in the work, and have learned something. We have certainly made some good experiences, but in comparison to the Leipsic population a very small percentage of scholars have attained much proficiency. It would be false to hide this or to be silent on the subject. Apart from the difference between summer and winter, the attendance must naturally be smaller in summer than it is in winter; but it has more spirit in winter. If we inquire as to the reasons we must decidedly exclude one, and that is lack of pleasure and love for the work. This is certainly not the cause. The scholars have a great interest in and love for practical skill. They are body and soul, in the most intense meaning of that phrase, devoted to their work. And why should it not be so? Is not the change from mental work to bodily activity refreshing? Must not every boy develop his own individuality through his very own exertions? Shall not the great demand upon his faculties made by the school find a welcome counterpoise in his own self-directed activity? It might be said to us, "You are taking too much of the schoolmaster upon you. You must leave the boys at liberty to manage for themselves. You must not force upon them your school objects." I must not let this objection pass in the general form in which it is taken. As a proof I quote to you again the exhibition of the School of Art, where the articles voluntarily made by the scholars are wholly suggested by school instruction. Another point is the financial side of the question. The work-instruction is too dear. It is too expensive for many parents: 18 marks a year is too much to expend on that kind of extravagance. Here the Görlitz example teaches us that we must begin to impart our instruction to the scholars gratuitously. The cost is the obstacle to its being shared in by many of the scholars from the public schools. We shall perhaps be able to make progress in this direction. Perhaps it is possible to incline the City Council of Leipsic to give a small contribution to our cause. Perhaps an appeal to the public of Leipsic will also be crowned with success, as was the appeal which the Görlitz select committee addressed to the inhabitants of that city. A further reason for the slight interest, especially on the part of scholars of the higher classes, is—I must speak out the noxious word—being "overburdened." The school-workshop knows that it has fight a battle to fight, not against the overburdening, but against the one-sided burden of mental work. I must point out in connection with this how necessary it is that boys should have all their faculties developed to bring out their individuality. The scholars of the higher schools have no longer any leisure. That is, I know not how often, brought before me by the parents. After their work for school they have no time free at their own disposal. With so much instruction and the school exercises besides, it results that, with the best will, they cannot visit the school-workshop. I should like here to quote a few words which were recently spoken by a friend. "A boy from one of the higher schools," said he "who, for example, has a talent for plastic art, is destined at the gymnasium or the real school to be either a bad scholar or to starve his talent." And neither of these is really necessary. We must manage to give the scholars leisure, and here the school-workshops will have to labour hand in hand with the efforts for the naturalisation of a thorough care for the body, through skating, swimming, playing in free places, gymnastics, &c. And now a little word upon the long road we have to travel. First of all, it is natural that the already existing scholars' workshops must be cared for, supported, and enlarged. Then, there are two paths to be followed, one after another, in order in time to introduce work-instruction. After that an experiment should be made of this work on one or the other seminary. The seminaries are *intermittent*, so that in winter there are many idle hours. It would be certainly better if the seminarist, already weary with reading and writing, should seat himself at the lathe rather than again take a book in his hand. That would be a refreshing change for him. According to my opinion, the future teachers of the people should spend their leisure hours in winter in the workshop, in summer in gardening, and they would be abundantly repaid. The next step for teachers who have finished at the seminary, and are intended for the manual teaching, would then be to make the attempt to introduce it into the elementary classes of the public school. It would be easy to connect this workshop-instruction with the existing intuitive teaching. I will even make bold to give expression to the heresy that it would be no misfortune for mankind if reading and writing were banished from school until the second year in favour of manual skill. The more elementary the class the larger the space to be given for the child's mind to form itself in. That writing should come before drawing rests less upon psychological grounds than upon tradition consecrated by time. The next question is, How shall we get time for it? The programme of the public schools is already so overloaded, the scholars so overburdened with work; even the kindergarten itself is overburdened. I believe myself that everything is possible to a determined will. One can make time, for the childish mind ripens better and more rapidly by means of its self-chosen employments, and may thus be expected to comprehend and realise sooner and more vividly the more difficult subjects appertaining to the upper classes. I may be permitted in reference to this to quote a passage from a letter from the above-named excellent educationist, Friedrich Beust, of Zurich. "I am firmly convinced," he writes, "that the instruction grounded in our minds by intuitive work of the hands (besides all the other advantages) offers the means of saving a full year of schooling, or within the same time of giving the children a faculty both of knowing and doing that they could not have attained to even in the extra year without being overburdened. I maintain that it is just impossible to accomplish in any other way what we accomplish; it is only in mechanical reading and beautiful writing that we get on more slowly than other schools." I once more call attention to the fact that the Beust Institute can look back upon an experience of thirty years. In these attempts to introduce the work-instruction into the public schools, the cheapest and most simple materials must be made use of. Paper and pasteboard should be used at first. The schoolroom itself must serve as a school-workshop, the drawing-class room could easily be turned into a work place. I must now gather up my different points. We will first of all endeavour that the school-workshops hitherto existing for supplementing school instruction and supplying the deficiency of practical employment

in the family should be further cared for. We will next look upon the school-workshops as experimental offices, in which the method of the future school-workshop is to be developed. Then, further experiments must be made so as to take up the workshop instruction as part of the education of the public schoolmaster; and, lastly, a path is to be opened in the course of time for the introduction of practical work in public schools, in the gradual methodical acquired manner of the school-workshops.

Director Dr. Barth, Leipsic: My honourable friend, who has spoken before me in regard to the manual-skill instruction, has spoken so fully and exhaustively that it is very difficult for me, as co-referee, to add much that is new to what he has said, and yet I will attempt it, in this way: that whilst Dr. Götze has confined himself principally to ascertained facts, and to the present state of things, I wish to conduct your thoughts to the future; and as he has spoken chiefly, if not exclusively, of the school-workshops, I wish to speak of the school-workshop to which the other is a sort of *etappe.* Before I proceed to this I must, for brevity's sake, distinguish between various divisions of the subject, taking first the considerations which refer to home industry, because these comprise work which is for the most part shared in by adults. If the young people do take part in them it is outside the schools. I should wish also to abstain from those discussions which refer to charitable institutions, orphan asylums, almshouses, boarding schools, &c. These establishments have already acknowledged the educational value of labour, and recognise it practically, but there comes a moment to them when they can do without the school, in so far as they use the workshops as a means of employment for the leisure hours of their pupils. Lastly, I may be allowed to explain, from my point of view, the scientific proof of the necessity of school-workshop instruction. Of this, too, my honoured friend has already spoken, so that I have the less to say. He has drawn attention to the literature, he has referred to the works at the beginning of our century, which the Schnepfenthaler teachers, a Blasche and a Gutzmuth, made public. He could remember the latest works which have originated in our own circle—the writings of Götze himself, and the latest paper edited by Herr von Schenkendorf on practical instruction. I should only like to go into these questions because there are people who dispute the necessity of school-workshops. I refer especially here to the objection which Johannes Meyer has raised in his paper on practical instruction; which has, however, been completely met by Mr. Editor Lammers. Meyer tries to ascertain, in a most peculiar manner, what precise school rules should be used, as he says that only such ought to find acceptance in the school as are adapted to general cultivation, and are calculated to prepare the pupils for a general mastery of life's problems. Now, gentlemen, if we look at the question in this light, it is to be asked, What discipline is so absolutely comprehensive and takes such hold of life, that we may venture to introduce it into the school? The method of his deduction of arithmetic and gymnastic must be pronounced a complete failure. On the other hand, I may say a word of warning against over-driving, and we must guard ourselves against attaching too great importance to the question for which we are fighting. And here I must decidedly disagree with an honoured man, whose centenary we celebrated a short time ago—I mean Fröbel, who wished that work-instruction, especially the practice, should be placed in the centre of the school, so that the other objects of the school, the other employment and activities, should grow out of the practice, and so take a secondary place. I believe the schools cannot wish this: a conscientious schoolmaster could never agree to it. It must be, as it has always been striven for since the Reformation, that ethics and religion are what every educational system has to cultivate, and this must under no circumstances be put aside. That is the central point which must be aimed at in our public schools, and it is this centre, too, which our higher schools, however difficult it may be to conquer the masses on this subject, have to strive for. It must be openly and publicly said, the school-workshop is a serviceable member of school organization, nothing more—but, also, nothing less; or, as Michelson expresses it in his paper, entitled "The School and Work School at Alfeld," "The learning school governs, the work school helps." If I have briefly described the place which work instruction must occupy in the school, I am obliged to make some additions to my statement in order to avoid misunderstandings. It is still very little reflected upon—and this will be confirmed by my colleagues from school departments—that every one of our schools has a double end in view—first a principal and then a secondary. The principal object that we have is to work at the religious and moral instruction of our youth. This object is served by certain subjects taught, instruction in religion and history as well as the lectures on classical writers. To this general object of education the rules which at present govern the school must be in a certain sense subordinated; but there is still another purpose which the schools have to fulfil, an especial one—namely, to educate the children for life, and for their calling. These two objects are not separate one from another, only the second must be regulated by the first, and it is the task of the school *technique* and school method to unite the two in a suitable manner. If this is accomplished the right kind of pleasure and unity will pervade the school, for most of the differences that take place here arise because people will always mix up the two objects. Then the secondary branches of instruction—geography, natural history, mathematics, languages, drawing—which bear specially on the intended vocation, will acquire their full importance. Now, gentlemen, the school-workshop holds a similar position to these branches of instruction. It keeps in view the general objects of education and the future calling as well; but this last in its own peculiar manner, as it enters into a close relation with the other branches of instruction (I have in view here more particularly geography, the history of civilisation, mathematics, and natural history), inasmuch as it furthers, supplements, and perfects these subjects of education in their effect upon the mind, so that it is through the workshop that even these first become training elements of education. Accordingly the school-workshop has a significant meaning, and if you will consider from this point of view the exhibition which we, of Leipsic, have brought under your notice, then you will be obliged to say that that is the right way to get at children. It is not, however, to be said that only such articles should be made as are required by the other branches of education, for the boy takes a peep at life even

during the time he is being educated, and it is right he should. The school works should keep this in mind, and consequently must allow those particular objects to be completed which have a direct reference to his future calling; only this must never take too dominant a position, and, in reference to this, I must warn the school-workshop against efforts to put foremost such works as are useful only in ordinary life. From the elementary form upwards until the scholars are twelve years old, that must only be allowed in the school-workshop sporadically, so that they may be put in, as it were, as a preparation for a later and more difficult part which is required by the educational instruction. This must be strictly adhered to if we do not wish to make a great mistake. Now the workshop, like the rest of the secondary branches of instruction, has the task set it of considering in its work the fitting for a particular vocation, and thus acquires another aspect. It comes into closer connection with life; it has to take into consideration the industries of the country or district in which the school lies. Then the workshop must proceed in a different way; it will have less in common with the before-named branches of instruction; it will be self-sufficing just in proportion as the pupil himself becomes more mature. With all this, however, it must by no means isolate itself from the other branches of instruction. It will need these much more continuously to spiritualise its activity, for never will we bring up in our school-workshop mere mechanical workmen, but wish to lead to industry and manual work people who enter with intelligence and interest upon the line they have chosen as their vocation. If I have described shortly the position of the school-workshop in relation to the other branches of instruction, and hope thereby to obtain the high consideration of our schoolmen, there are still other objections to be met. It is said we have already enough school hours: shall we introduce still more? That is the question already alluded to of the overloading and overburdening of our youth. But I do not think we ought to make this objection to the school-workshop, for it is acknowledged that it acts in an entirely different manner to theoretical instruction. First, it provides a change of activity, and this is, as everyone knows, a great rest. The objection would hold good if it were proposed to add to the existing number of lesson-hours; but that idea may be dismissed without further discussion. More especially will this objection not apply if the teacher has himself manual skill in geography, mathematics, natural history, &c., for in this case he will so manage as without injury to his lessons to give a portion of them in the workshop. When the work necessary there is completed by the scholars he will take up in the school the thread of instruction in the theoretical department at the point where it left off in the workshop. If, however, in the beginning teachers are not to be found who are cultivated both practically and theoretically, then a special workshop-teacher would be necessary for the school, and certainly the number of hours given to theoretical instruction will be lessened, so that no overburdening is to be feared as arising from the workshop-instruction. Another objection is that it is doubtful whether we can divide the workshop-instruction into classes. Now, honoured friends, I do not believe that that is so difficult, only it must be done in the right way. In particular the management of the schools and workshops must take the necessary precautions. Of course one would not take up a class out of the middle of the school—perhaps a middle or upper class—in order to let them commence workshop-instruction. It is easy to see what a mistake this would be. It would be far better to begin with the elementary classes and employ these with works easy of completion, and at first with one class only, not with several. The instruction might then be allowed to grow up, so that it may only be completed in eight, ten, or twelve years, according to the school. If it is thus managed a correct class-instruction will certainly be attained. Then the difficulties will not appear which have shown themselves here and there whilst the scholars were awkward, did not understand how to deal with the work material, and lost all pleasure in it. Then it cannot be said, as it is now with a sort of spiteful pleasure, "The course in ——— has gone to the ground through want of interest in it. That in ——— is given up again by its supporters." A main requisite in giving workshop-instruction in classes is that the teacher possess the necessary teaching ability. If this is the case he has only to make use of all the help that gives him to keep a whole class judiciously employed. And further, if, like all teachers well prepared, he has suitable materials and tools at hand, and the instruction rightly parcelled out, then everything will go well, even if he includes what Beust in Zürich practises, instruction in groups. There is work which cannot be carried on by all together—*e.g.*, working in wood at the lathe. If the teacher only possesses six lathes, and yet has to find employment for from thirty to forty scholars, of course only six scholars can work at the lathe. In teaching in groups, however, division of labour takes place. While five or six scholars take a subject in hand, an equal number of other scholars are busy with the same subject, taking turns at it, as is done in Beust's institution, who has geographical models made in such a way that one or other of the several scholars shall always be at work at them. That is done, as may be noticed in passing, not because the article could not be made by any single scholar, but because the theoretical instruction in geography would otherwise proceed too quickly in comparison with the practical if everyone were to work at a separate relief. But if the scholars are collected in groups they finish the work off quickly, and keep up with the progress of the lesson in geography at the same time. And finally, if the supposed teacher is able to maintain good relations with the other discipline of the school, it cannot be otherwise but that the opinions which exist antagonistic to the workshop-instruction must disappear. But now comes the question, Where are we to get teachers for the new objects of instruction? This is the last point on which I have to speak. Dr. Götze has already touched upon it, and I believe I shall be able to agree with him. However different opinions may be, one point cannot be abandoned. The workshop teachers must be pedagogically-cultivated men. For example, if we allowed instruction to be given by artisans, as has already been done, we should soon run the risk of the instruction losing its educational character. It would degenerate into mere hand-work labour. As to what kind of work is to be done, the pedagogical authority would not have to decide, but only the hand-worker. That would not do even in technical schools, and yet the teachers there have nothing directly to do with hand-work. If, however, pedagogically-

cultivated powers are necessary, the question arises, Where are they to be cultivated? Now, I am of opinion that this should be managed as the education for the teachers of gymnastics and drawing is managed, whilst the central educational establishment for workshop-teachers is being arranged; only it is to be wished when this does take place that this foundation institution shall not stand isolated as its name implies—Central Educational Institution. If this comes to pass, a self-sufficing method may certainly be cultivated, but the connection with the remaining members of the educational instruction would be entirely severed, as is the case with the present gymnastic and drawing instruction. No, these new institutions which are to be established must remain in closest connection with the pedagogical, and can only therefore be settled where an academical pedagogical seminary exists, and must be brought into the closest communication with this and the training schools connected with it. If such academical pedagogical seminaries are not at hand—unfortunately there are very few of them—then the newly-founded establishment must be temporarily connected with the existing public school seminary. Of these there are some excellent ones. I am acquainted with some which are worked with great zeal and notable ability, in Saxony as well as outside of our narrow fatherland. And I am convinced that if such a connecting-link were established, the school-workshop would not only hold aloof from everything unpedagogical, but very soon a large number of teachers would go forth into the land who have thoroughly grasped the object of the new institution, and have it practically at their fingers' ends. Gentlemen, I am at the end of my reflections. I have only now to give expression to one wish—viz., as there are now hardly any German schools in which there is no thought for womankind, that they may be instructed in hand industries, so at no far distant time may it be that the boy too receives his just claim in the same direction.

The President: Gentlemen, according to the resolution of the central committee, a third short report from Mr. Von. Schenkendorff will be subjoined on the same subject.

Mr. Von Schenkendorff, Görlitz: Highly honoured gentlemen, however much I may agree with the former speakers, still, as to the carrying out their plans, I take a somewhat different standpoint, as I have kept most in view, not the school with its instruction apparatus, but mankind as such, and the life in all its phases into which the boy enters when he leaves school. I reserve to myself the right to return to this divergence in the debate on the reports. I may be permitted to introduce my report on the Görlitz manual-skill school that I may explain the most general point of view which is the groundwork of this school. After this I will sketch the method of introduction, for in my opinion the cause of hand skill must strike hard in order to become a universal blessing to the German nation. Gentlemen, in human nature we must discriminate between the two leading lines of activity—receiving and giving, accepting and giving back, suffering and doing. By the receptive activity are formed memory, knowledge, understanding, intellectual spontaneity. By the practical activity is formed the power of doing—that is, the ability to carry into effect something maturely considered, and determinedly willed. For both objects man possesses a natural aptitude, which again is assisted by special bodily parts as organs. If the problem of a rational education must consist in the awakening and harmoniously cultivating the individual talents of men to prepare them for life and to form them for being useful members of the community, so the present education does indeed strive to teach everything that is attainable in the path of the recipient, but it neglects almost everything which develops practical activity. The present generation is over-cultivated as to the intellect, whilst the practical side, the technical facility, that powerful impulse of the will to use the organs, remains as good as uncultivated. The infallible and disastrous results of the present system of education are that the body must suffer much whilst the scholar is continually sitting, and that in enclosed spaces, both during school time, and also at home; that the will does not attain its development; that hand and eye remain uneducated, so that awkwardness, stiffness, and a want of practical sense are shown everywhere; that a want of self-dependence increases, and that entirely unfit elements are introduced into trades and industries—those two great arteries of our national life; and that the scholar has always to do only with exhausting mental work, whilst every alleviating activity is wanting. This will certainly not succeed in producing a generation sound in body and mind as well as socially, but is already consuming the very pith and wearing out the nerves of our youth. But, gentlemen, this mental training we hear so much of is in itself one-sided, for if the thoughts are being continually turned inward and the habit of introspection is continually indulged in, how can attention be given to the gradual unfolding of the outer world by which alone is formed a clear conception, a swift comprehension of given circumstances, self-reliance, and even the power of action. Is not a continual tendency to dreaminess the necessary result of the undue preponderance of mental life? Truly it is necessary to call a halt here, to cry "No more." Here we must take up a firm position and mark out a path back. Gentlemen, I am, however, very far—and I wish to give particular expression to this—from making any one especially answerable for this unrighteous principle of education, just as little the executive teachers as the higher powers of the school management. This would be just as silly as if one were to direct reproaches against the spirit of the times. We find ourselves confronted by a current in which not single individuals, but thousands, yes generations are borne past; and this current we must oppose by all lawful, and honourable means. This is our task, our difficult task; and, indeed, so much the more difficult as we have to disregard ancient habits, old-established opinions, and so many interests. But, gentlemen, helping, solving, sheltering must here stand by the side of consciousness of good which we have in view, the right which we promote, the pure moral power which alone form our incentive, and the happiness of the children, in which all have an equal interest, high and low, rich and poor. Animated by the same motives a man has arisen just now in the far west of our German fatherland, in Düsseldorf, who, with singular power, with the greatest warmth of feeling, with entire moral earnestness, yes with enthusiasm, has taken up the question of this charge. Perhaps many of you have already read his paper, "The Cause of our Suffering;" and have gathered from it how he has called into existence a German central union for the care of

the body; how he has enjoyed the support of all the authorities and unions in Düsseldorf as well as the entire acquiescence of the Crown Princess; how a joyful acclamation for this heroic deed has reached him from far and near. I will bring before you a characteristic sentence from his paper. At page 45 Hartwich said, "If you overburden the brain during the time of its developing, and chain the body too long to forms and rooms, a half-developed mind and chronic ill health is the infallible result. One must get to understand that everything has its limit, and, in view of the vast stores of knowledge which are continually being added to, take into consideration, before it is too late, the inadequacy of human nature to grasp the whole. Whoever anticipates and feels this danger must take care that 'halt' and 'turn back' is called out soon enough, or we shall have to accept the most disastrously-convincing proofs that culture and education must lead to destruction and ruin. How wide-spread cultivation has already shaken the constitution of our race, how much nervous debility, poorness of blood, irritability and susceptibility to bodily and mental suffering have been brought about by it, any physician or thinker can tell you who gives his serious attention to these matters." In another place, at page 29, he says, "From our sincerest conviction comes our warning: learning, knowledge, and memory must not claim the whole day, the whole of our youth. We parents have not only the right, but it is our sacred duty to keep a watch on this and to raise our voices in protest. Here to hope everything from the State would be a blameable confidence. With the prodigious demands made upon the State from all sides it can in many matters only step in as helper and promoter; a fresh and free activity in unions has in this everywhere begun." It would lead me too far if I were to read more from words so carefully weighed, written with so great a clearness and warmth of feeling, and yet with a powerful hand, and dictated by a real moral earnestness. They stamp themselves deep in every soul who has at heart the well-being of his fellow-creatures. The Dusseldörf Central Union does its work now under six heads—namely, gymnastics, skating, games and fêtes, bathing, swimming, and rowing, as well as a literary and medicinal division. Its plan is: mornings to educate the mind, afternoons the body and the disposition. It maintains that the weekly two hours instruction in gymnastics is quite insufficient. Unfortunately, as you see, the division for manual skill is wanting. There is no doubt that all these exertions are able to harden the body, to make the disposition cheerful, and the intellect bright; but the more subtle gymnastics of the mind and body, the cultivation of the sense of form and beauty, the just sense of order, the complete harmonious perfecting and cultivating of the mind, body, and character—this can only be perfected by means of bodily work, and through the manual exercises of the workshop-instruction. Such an instruction is so much the more necessary for these efforts, as winter and rainy weather will often interfere with their being carried out. But this is made up for both by the Düsseldorf effort and our own. It would perhaps be well if we all strove in common for the same end—in summer to lay greater emphasis on movement, in winter on handwork. In the country, where the boys do not suffer for want of fresh air, instruction in farming might be introduced. As our present efforts may gradually develop themselves, we welcome with pleasure these allies in the west with whom we may, as I venture to hope, soon be drawn into closer alliance as a central committee. As regards the latter part of my report—namely, the general mode of bringing this into operation, as also how education of the hand can become a benefit to the whole German nation, I believe that there could not be a greater mistake than leaving the cause entirely in the hands of the State, and necessitating its being introduced by means of enactments. In this view of the subject I have been much misunderstood, and yet I have taken precisely the standpoint which I explained exhaustively in my pamphlet.* This was certainly the most unpractical way, because for the general introduction of such a system of instruction powerful means are requisite, the burden of which would in the present condition of our circumstances fall exclusively on our communes. Any attempt to throw the expense of this simply on the State would involve many difficulties, and would soon make our cause unpopular. But let us suppose that the State surmounted these difficulties, it would to a certain degree have to deal with a blank page, for gentlemen, there does not yet exist a defined system for carrying out such instruction, and welding it into the organism of the schools. We all find ourselves to-day seekers in the path of experiment. On these grounds it would be certainly more advantageous if State and people took up this cause together, so that the people may work through free unions, whilst the State may second their efforts, be they moral or material. This, of course, does not mean that the State should not make it own attempts—nay, this is even to be desired, as it would at once be in a position to judge by its own experience. Now, as to the Görlitz work-school more especially, I hope that in the form in which it has been called into existence, and in its management, you will recognise the principles which I have ventured to formulate, and will see how we in Görlitz are chiefly striving to develope in the child the power of practical knowledge, his technical capacity; for the first thing that manual instruction has to do is to fill the great void that is left by the present system of education. We shall, therefore, certainly not assume a hostile attitude towards those exertions which are destined to be a useful element in the general instruction apparatus. The Görlitz manual-instruction school was called into existence through a particular union for manual instruction which supplies the desired means for it. I have ventured to offer for your acceptance a quantity of regulations and exemplars of the school orders. The school was opened in March, and immediately afterwards arranged to have a one-year course. The commune allowed the managing teacher in Emden to complete the arrangements, and granted the school a free site. The union has about two hundred members who contribute yearly nearly one thousand four hundred marks. The school itself consists at present of eight divisions, of fifteen pupils each, 120 scholars in all. One of these classes is composed of teachers of the parish school, in order that teachers who are interested in the cause may enter themselves for the new instruction; and that upon extension of the course, we may have a sufficient

* "Practical Instruction: its educational, domestic, and social value." Breslau, 1880.

amount of teaching-power at disposal. The remaining divisions consist of scholars from the parish schools and partly from the middle and higher schools. In the beginning we had taken a great number of scholars of the third class from the Gymnasium, and the Real School; but these, although they came readily forward of themselves to take a part in our instruction, to our sorrow withdrew by degrees, until only four were left; and this was done in conformity with the wishes of their parents, because the boys, in consequence of their home tasks or some private or musical instruction, could not, in fact, spare the requisite time for the manual-skill instruction. At the same time I feel bound to call attention to the fact that the teaching-staff of the Gymnasium and the Real School maintain a friendly attitude towards the efforts of our union, as they are convinced of the educational importance of the manual-skill instruction. The circumstances of the scholars of the higher educational establishments are unhappily as they have been stated to us. At the head of the schools stands the technically-cultivated teacher, whom I have already mentioned. It is his especial duty to conduct the instruction upon pedagogical principles. He places the scholars therefore from time to time in accord with the end in view, in order that they may direct their attention to the characteristics of the thing to be imitated, to its educational bearing, and to the progressive stages of the construction. A short theoretical explanation of this sort heightens perceptibly the interest of the boys in the instruction, and especially leads them thoroughly to comprehend the object to be imitated. The director overlooks the scholars at the work itself in the manner enjoined, and maintains discipline and order in the school. The instruction will be divided into three divisions, modelling in clay, carving in wood, and paper-work. Every scholar learns modelling. After this one-half practises wood-carving, the other half paper-work. Every week the scholars exchange their branches of instruction. For each of these the director has an efficient master-tradesman provided for him to be by his side, whose chief task is to keep the scholars up to the technical grasp of the execution as well as, above all, to work in a carefully-planned way, and also economically. At present we have had to put in a teacher instead of a bookbinder, because we were not able to pay a special bookbinder; still, we have secured a capital elderly bookbinder as technical assistant. The time of instruction amounts for each scholar to four hours weekly. In order to have an average amount of bodily strength to do with, and at the same time to have a definite starting-point, we have provisionally only put in boys of thirteen years old, who, so far as regards the public schools, are taken the most part from the first class, a smaller number out of the second. The supervision of the scholars is exclusively the work of the Hon. Rector of the town school—that is the middle school. The visit is a voluntary one, but through this supervision and through the friendly attitude of the Rector to the union a certain bond of union with the school is created. The children apparently have a great love for the cause, and come to the school willingly. They pay no school fees, and are at no cost for the materials. Indeed they have for their own the articles which they have completed. What especially excites their pleasure is that their parents and relations rejoice over the skill attained by the children, and this reacts upon and gives pleasure to the children. For the rest, the acquisition of the completed articles is of no great importance from a financial point of view, as the disbursement for raw material is comparatively unimportant. There is besides one thing more to consider in this—the fear expressed in many circles of artisans as to the competition of the schools. As regards this point the union at Görlitz found at first in trade circles a very strong opposition. I can, however, honestly state that this is already dissipated, since they have been fairly convinced that our schools have only a general cultivation in view, and that therefore the large display of hand-made work here shown is independent of business considerations. After the last year's leaving class of public school boys, who in Görlitz are 250 in number, have found admission to the handicraft school, the course will change from a one-year course to a two-year one, and will soon take in boys of twelve years of age. The subjects will be explained by means of models, which in themselves are progressive. They are so chosen as to unite in elementary subjects the pleasing and the useful, whether for instruction or common life; and, on the other hand, the subjects must be progressive. I acknowledge that such a system of exhibition as this has its own special difficulties, and if we have, notwithstanding these, taken our share in the exhibition, you must not look upon these objects as selected because they are permanently sufficing. They have been made step by step, in strict accordance with the direction of the master-tradesmen. We have lately entered into negotiations with Herr Grünow, first director, &c., of the Art Museum in Berlin, in order to combine a methodical, progressive, settled system for cultivating skill and beauty; also, with a view to a system of reports for modelling and wood-carving, which, as I expect and hope, will lead to the wished-for results. Perhaps I may venture to make use of this opportunity to request Director Grünow and Professor zur Straszen, both being such warm friends to our cause, to come to our aid, each in his own department, and thus materially further our efforts by joining us in designing a system of patterns which shall be serviceable for all descriptions of hand-work which have up to this time been adopted in manual-skill instruction, such patterns to be of every variety, and to be represented in drawings. They would by this earn the sincere thanks of all those who take an interest in the carrying out of our idea, the number of whom will, I trust in heaven, increase from year to year. Perhaps both of these gentlemen will ally themselves to us, and attract to it, if they themselves wish, more of such gentlemen as have for a long time themselves conducted a manual-skill school. In this direction I hope much from the further advancement of your plans. I may certainly indulge the hope that the gentlemen alluded to may contribute what may be troublesome work to them, but to us will be fruitful of good, and serviceable to our business and our industries. Our efforts in Görlitz are further directed to the establishing of a definite method, according to approved rules, for imparting manual instruction, and to have this recognised as one of the distinct subjects of instruction. As soon as the course has run through its second year the working by models, drawing from copies—even works of original design, which in themselves will contain the elements of progress—

will follow. Even the theoretical instruction before indicated will take upon itself the teaching of the principles of form and colours, as well as of the knowledge of materials. So far practically has the course of my own experience extended, and it has throughout approved itself by the results. If now it were possible to commence operations at once in several parts of our fatherland, in such a way that the peculiar circumstances of each locality would be taken into consideration, then the ground would be prepared on all sides, and it would only be a question of time when the schools would themselves adopt this new object of instruction. From this, gentlemen, you will be able to see how the manual-work idea finds itself as yet in its very first stage of progress, and how much it needs the devoted efforts of all those who have set before themselves the beautiful but difficult task of making it productive of a common benefit to the German nation. Gentlemen, of what vast consequence is education; of what great importance to the welfare or misery of mankind, to their health, their success in life, the formation of their character; of what importance to their life as a people! Undoubtedly there is much that is inherent in man, in his bodily as well as mental constitution. But as in nature similar germs develop in various ways according as they are laid in fruitful or unfruitful ground, and after this rough storms blow down the young plants, or the warm rays of the vivifying sun shine upon them, and even after this their shoots are allowed to grow wild, or the care of the gardener here trains and there prunes them, just so it is with the youthful mind of man. It takes a different shape if it grows up amidst work and discipline and love to that which it would take if it were left to itself without guidance, without support, without control, and without affection. The influence such a bringing-up would have upon the life of the people generally was recognised at the time of our fatherland's deepest depression, more especially by Arndt and Fichte; and I need only remind you of the celebrated saying of the latter to the German nation—it gives point to what one might say about some proposals of to-day, it gives the fullest authority to the demand we are making: "Give the rising generation a better bringing-up." Truly our fatherland has since become great and powerful, and our system of education serves as a shining model to many other nations. Who among us has not enough patriotic feeling to recognise this change of our destiny? Who, too, does not thankfully remember those who have so long, so successfully, so faithfully, and so devotedly laboured, and are still labouring, at the cause of education? But as the individual man, be he ever so far advanced in his cultivation, be he animated ever so deeply by a true moral earnestness—that source of all moral power—modestly, in quiet self-knowledge, recognises and knows well his many deficiencies and faults, which, in spite of his strongest will, he has yet to correct for himself; so we Germans must now consider as to our fatherland, and also as to our system of bringing-up, in the all-important cultivation of the mind (if we would not waste the vital energies of the German nation—if our fatherland is, in its struggle with other nations for the command of trade and industries, to be at all on equal terms—if the rising generation is to grow up into perfect men), how essential is the realisation of the work idea, how necessary it is that learning, and putting into practice what you have learnt—knowledge and performance—should be developed in equal degrees. What new powers would be awakened in the next generation, what a new life would blossom in them, equally in power to do and power to know! And so let us, too, in the consciousness of this lofty and noble object, work for its realisation, so that the happiness and well-being of our fatherland may increase.

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Herr Von Schenckendorff, Görlitz: . . . I should like now to come back to some questions of principle which have been brought under discussion. Dr. Götze would like the instruction to be carried out without the assistance of artisans, and entirely intrusted to teachers. Now, gentlemen, if I were to state my standpoint on this question, it would be this: For the present I cannot do without the artisan. Should the cause be so far developed hereafter that the public schools would take the manual-skill instruction into their own hands, and the seminary would take care that the teacher has gone through years of training from his youth up on this subject, then I doubt not the teacher would become a technically-finished and accomplished man. I doubt this the less as we have already so many excellent examples which show us what a teacher can do after even a few months' industrious application. The director of our Görlitz school is the best proof to me of this; but to accept it as a general rule that the teacher should in six months or less acquire an amount of experience which would enable him to do technical work in an accurate manner, I cannot believe possible. It takes years to gain this experience; the cases in which it is gained in a short time are quite exceptional, and only prove the rule. Therefore I hold it is better to do as is done at Görlitz—place a pedagogue at the head of the whole, and let him manage it pedagogically, so that the boys shall be aroused to consider intellectually the work they accomplish with their hands; but also that this pedagogue should have at his side a thoroughly capable master-tradesman for each branch of instruction. This appears to me to be the principal thing. If Headmaster Dr. Götze should again have to complain of the smallness of the number of scholars, I think I should ask him if it were not possible to give the instruction gratuitously. The means, I think, would easily be found in this Leipsic, so rich, so easily roused to enthusiasm for everything that is good and beautiful and useful, so that an opportunity would be given to the poor man too to send his children to be taught. I believe that even our present friends, if they can get some rich people to join with them, would be able, with the co-operation of the commune, to bestow the benefit of this instruction upon the poorer boys. You have learned from my report that in Görlitz the courses were quite crowded; and there during the last school year we restricted our instruction to boys of thirteen. The great number of our scholars was due to the fact that we teach them free of cost. In respect to one other circumstance, I find myself opposed to some gentlemen. I take the public school boys in the last year of their schooling, whilst others wish to apply the instruction to boys in their first year. Yes, gentlemen, if I were to take up the cause from a purely theoretical point of view, I should entirely agree with you. I say, too, that the kindergarten teaches well now what the manual-skill instruction afterwards completes. Nothing, therefore, would be more natural than to desire that the schools should take

advantage of the work of the kindergarten, and then continue the education of the boys in the same way. The strong contrast between the kindergarten, where all is life and motion, and the public schools with their strict adherence to school routine, is unfortunately still an existing state of things. The school is wanting in any kind of change; and it is just in this that the manual instruction will make such a salutary change. I must now say that if I begin anything I like to be able to show a certain result in the least possible time. I must win over the great mass of the teachers; I want to win over the higher authorities; I want to win friends who will use their means for us; I want to convince everybody. Just reflect; if I commence with children of seven years of age, then there must be seven years of public-school life before I can show what effect the training will have upon after life. By beginning at the last year of school life we shall be able to see the effect of the instruction in one year, and can observe besides how this one or the other gets on with the instruction, and how he takes to it. In Görlitz we regard each and every one from a public point of view, and seek information from the teachers as to whether they find any difference between these pupils and those they had previously; and, if a difference, what. We hope by means of these experiences to be able to act on evidence. The standpoint which Mr. Director Barth has taken up in relation to the cause is one to which I am myself totally opposed. Director Barth—and this is one of the most important questions which is striking out a path for the future, and must give us direction for our journey—the question, namely, whither are we steering and what is our aim—will only admit of manual-skill instruction as an educational aid to other branches of instruction, as physics, chemistry, geography, mathematics, &c. He thinks to obtain, by means of the manual-skill instruction, greater results in these branches of education. That is in its entirety the standpoint which Mr. Director Barth takes. He will not therefore allow manual-skill instruction to be introduced into the school as a special subject in itself, but only as connected with all other subjects, as a link in this great chain. I pointed out in my paper entitled "Practical Instruction,"* written two years ago, the very means to be employed here. I own that after two years of hard work at the cause I take up precisely the same standpoint as I did then, so that if I am asked what end the manual-skill instruction is to serve, I answer that it will help to perfect one of the two great groups of faculties in human creatures: it will fill a void which has hitherto existed in our cultivation. Its place is, gentlemen, next to instruction in drawing, and it is, perhaps, organically bound up with that subject. Drawing is the reproduction of an object on a flat surface, and is done with a pencil; skill of hand is the reproduction of a thing according to all three dimensions in their broadest comprehensiveness, executed by means of the most varied implements and by use of the most different materials. If one says the sense of beauty and form is developed through drawing, and perception is also aroused and developed, then I say that this can only be achieved in an imperfect degree by instruction in drawing; manual-skill instruction, which works with more versatility, and is besides a much more potent agent in intuitive development, must step in to its aid. Therefore I would give the manual-skill instruction a special place in my plan for teaching, for indeed it fills up special wants in our bringing-up. But, gentlemen, as drawing occupies a place of its own, and is yet an aid to the other branches of instruction—for example, we call drawing to our assistance in natural history, mathematics, geography, and many other subjects—so you make use of the manual-skill instruction as an aid to drawing without taking from it its independent standing, which in my opinion it fully deserves. Let us do our best to unite organically instruction in drawing with manual-skill instruction, and by this means to give it an independent footing. Is not modelling, which is a part of the instruction in manual-skill, already taught in connection with drawing? Now, I am far from being opposed to the idea that manual-skill instruction should be valued as instruction—far otherwise. But where we are in a position to make prismatic bodies, or where in physics or chemistry we can make a greater impression on the child by teaching him to make things for himself, and so impress him more deeply and quicken his perceptive faculty, we should certainly not exclude these means from our system of instruction; on the contrary, I look at this as one of the aims to be striven for. I do not wish to negative this. I look at this as the practical object, whilst I consider manual-skill instruction as educating the faculties. In this instruction we must of necessity take up something far broader and wider, and that is to educate according to steady methodically-progressive forms. We say we will cultivate capacity; we will educate and exercise the hand and the eye, and we believe we shall attain our object through the mere work. But this is not enough. We must much rather lay the foundation of a system for this instruction, which shall be in itself steadily progressive and contain in itself a great variety. I thus come back to my petition of yesterday morning to the two friends of our cause, Professor zur Straszen and Director Grunow, to organize for us such a system. This would be of immense use to us, it would be the very A B C of models suited to a child's comprehension and development. If a boy has gone through these schools—if his training has been technically correct, then he must have attained the object which we to-day, after our different manners, have been discussing—that which, in fact, we wish that every boy should in the future take into life with him as his own possession. . . . I entirely assent to the union of the pedagogical with the useful and the instructional. I oppose mere formal training of the hand and eye, as you will best understand by looking at the group of our model works in the exhibition, but I allow useful objects to be made, which will serve as helps to instruction. This you will perceive in the exhibits of pasteboard and carved-wood works. By these will be seen exactly what connection the two subjects have with one another. Now, I wish to point out, in reference to the exhibits of the Görlitz school, one which can only form an exception. You have seen in the Görlitz exhibition that we placed amongst other objects the head of our Emperor, the profile in relief, as well as a bust of Fröbel. They have been executed by a teacher-participator in the course, who a year ago could neither model,

* "Practical Instruction: A Demand of the Age on the Schools: its importance educationally, domestically, and ocially." Breslau: Royal University Booksellers, Ferdinand Hirt.

nor carve, nor work in pasteboard. I only mention this—it is, of course, an exception—in order to show how many splendid talents remain undeveloped for want of the necessary stimulation. How would those works requiring a skilful hand, and our arts as well as our industries be newly-awakened and developed by elements which are lying quite unused! Therefore from every point of view it is to be wished that our efforts should have the most active support.

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Director Dr. Bartels, Gera: Gentlemen, first let me give expression to my thanks that the question has been taken up on its practical side. Several gentlemen have now spoken who have been all through labouring in the cause, and have devoted themselves to it with enthusiasm. To these I do not belong. I must own that I yet stand at the gates. I am, however, trying to beg for admission, and will try to obtain it. I must admit that I think what our colleagues from Dresden have advanced is quite just. They say that the teachers are to be excused if they are not enthusiastic for the new idea without knowing more about it, for, on all sides, too much demand is made upon the schools for new subjects of teaching; as, for example, legal knowledge, knowledge of agriculture, &c., so that it is really to be pardoned if the teachers do not at the first sight become enthusiastic about it, and take part in it. I own honestly and truly that a year ago, when I was in my native town of Göttingen, where a course had been begun, and my colleagues went to attend it at a neighbour's house in order that they might learn the art, I shook my head very doubtfully over the whole business. I asked what does all this lead to, and what more burdens will they lay upon the school? I then went back to Gera, and there in Gera I began carefully to study all that was written on the subject of manual-skill instruction. I read all that was written in its favour as well as against it, and I finally arrived at a result. The point which interested me was not whether it was judicious to introduce the subject into the schools, but—and on this hangs the whole question, that has not been made clear by the previous speakers, who are promoting this movement and establishing courses—what precise thing is meant by manual-skill instruction. I have to-day heard one gentleman say that it must serve the schools; another says no, it is a preparation for a handicraft, and a means of perfecting the scholar in it; a third says it ought to be incorporated into the organization of the school; the fourth, it ought to be left to private efforts; whilst others again say the authorities ought to intervene, and it ought not to be left to private enterprise. The subject still needs to be more methodically worked out. Before all things it must be made clear what objects it proposes to itself, what educational problem has it to unravel. Is it to be organically bound up with the school, or is it to be a preparation for a handicraft, and for the cultivation of sound technical skill? These are questions which must be clearly answered. I was glad when the authorities said to me, "Go to Leipsic with a teacher, for it is a most important thing that every town should obtain light on this subject." I here say openly that I shall return with great contentment from Leipsic, and so much the more as I hope now to be able to send a teacher to Dresden. I most earnestly entreat admission for him there, and that he may not be sent back. I think, out of seventy-two vacancies, they might reserve one-seventieth for Thuringia. I beg once more to offer my best thanks, and I earnestly entreat you to continue to devote your attention to this point, How is the instruction to be carried on, and what means are to be taken in order to introduce it systematically into school organization? or must it provisionally be left to private enterprise? It is necessary to know which of these two views is to be acted on.

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Headmaster Krusche, Leipsic: I should like just to mention one point for consideration. If the wish that manual-skill instruction should be an independent movement, entirely disconnected with every other school subject, should be yielded to by the schools, then a danger becomes apparent which must absolutely be avoided—the danger of overtasking the pupils. In the school organization of to-day, where the different departments of teaching often traditionally run side by side together, but no one of them concerns itself about the others, a new impetus might easily, in spite of special directions contained in rules and plans of study, be given in this way to the habit of over-tasking. Secondly, it must further be considered, if the school-workshop is reproached with having no definite aim, and if the absence of a psychological principle is felt, that the true psychological foundation principle, as I think, is this: the connection and unity of the train of thought in school instruction. It is not so at all; every problem arising out of our daily calling comes into conflict with some interest and grapples with it, and is with gladness and patience solved. The scholar, too, has a business in life—that of general cultivation. I own that carelessness is a very serious obstacle to the training skilfully the hand and eye, and I have already had occasion to speak out upon this in another place. Here I will only remind you of a book, now forgotten, but which was published in 1745 by the philosopher Sulzer. It was entitled "Rational Ideas on the Bringing-up and Education of Children." In this work the necessity is maintained of an intimate relation of the bodily with the mental instruction. It holds as necessary, if I recollect rightly, that, if the human being is to be comprehensively trained, the schooling, in the case of boys, ought to be supplemented by instruction in manual skill; and, in the case of girls, by suitable womanly hand-work. If we cease to look at manual instruction from the point of view of its having a definite independent and extraneous aim (though even then, in its methodical working out, it must have some connection with the school), I can readily comprehend that ninety-nine out of a hundred teachers, who have only the bare outlines of instruction in their minds, do not regard this as belonging to it; and very likely they must so look at it, because in reality it does not concern them. But if this manual instruction conduces to the mental cultivation of the scholar, and, moreover, to a mental cultivation tending towards a unity of design in his instruction, and to a completeness—a wholeness, so to speak—in the circle of thought with which he is intended to be indoctrinated, then I cannot conceive of any other course than that of a close connection of manual instruction with the school system. There is always too much importance attached to the purely physical cultivation of the eye and the hand—the acquisition of the highest possible degree of dexterity. But just here lies the great mistake: it is supposed that eye and hand

can be rendered skilful, yet without deriving and shaping the problems and proposed ends—and problems and aims are things absolutely necessary—from the scholar's sphere of thought. The mind, the eye, and the hand all work in their most intense and cheerful and willing manner if they work in a department in which the mind already rules and controls. It is on this account that manual instruction is so desirable for the forming of the will, since the scholar works to an end that has sprung up out of his sphere of thought as a problem for him to solve. It is not the distant end that we must first strive to reach; every step is an end. Every cut with the knife, every turn of the gimlet, is a step further towards the goal; the scholar can see step by step whether he comes nearer to the end he aims at; every cut of the saw brings him nearer to his object; he does not for an instant lose sight of the great end of his exertions; but, when he is cutting, his first object is to keep the line straight. And so it is with everything upon which he exercises his skilfulness or unskilfulness. By thus working step by step towards a defined goal, and by the visible progress made, are formed cheerful and persevering habits which help to the achievement of a purpose and assure success—the prize of exertion. Herein is contained for me the great value of manual-skill employment in the bringing-up of our young people. We teachers must not, however, look upon manual-skill instruction in any other light than as one subject which has its place in a complete system of thought, and in the idea of education; then, too, I believe that we are serving, on the other side, the cause of the claims which you are seeking to justify. I wish only to submit this for consideration. I perceive in the idea of manual-skill instruction, looked at as an isolated, independent subject of instruction, only a fresh impetus to overtasking, without having any hope of attaining what we should struggle for.

Herr Von Schenkendorff, Görlitz: I should like briefly to explain one idea. If I have defended my own particular standpoint I should not like to omit bringing forward the fact that we are all true, warm friends of the same cause, and all are agreed as to its broad and general principles, only differing somewhat from one another in the way they should be applied. If I carry out and defend my own view, which I have adopted from conviction, so you who are on the other side may be sure I can look at the subject from a different standpoint, and can rejoice if another way than mine can be found to our common goal. No one is ever entirely right, but if we all work in a practical way, and go on our way actively, the right way will be found of itself. I am convinced that when some few years have passed over the country the several standpoints will be merged into one.

Dr. Birch-Hirschfeldt (member of the Medical Board): With respect to what has been accomplished by the two last speakers, I should like to mention some misunderstandings; for although we all have different views as to the working of the manual-skill instruction, still we none of us look at it as it was regarded at its first attempt. Yet I believe if the task had been given to the most advanced amongst us of making proposals for the immediate introduction of manual-skill instruction into the public schools, we should have begged to have this question postponed a little longer. It is not at all necessary to decide here whether it is a secondary subject of instruction or whether it is a subject of instruction connected with other subjects of instruction. We have already gained experience, but we are still in an early stage of our experiments—we are comparing our results. We wish to continue to do this, and probably many years will elapse before we make the very foundations of the public schools totter with the largeness of our demands. Yet everyone who is travelling along a road will throw a glance backwards and forwards, and it is unavoidable, in discussing such subjects as are on the order for to-day, that we should also give a look into the future. It is like building castles in the air for future occupation. Fair-minded persons, who are unconnected with us, will not conclude, from our drawing different pictures of the future, that there is any difference in the object of our exertions. I wish to call your attention to this, that in spite of apparent contradictions we are all agreed on one point, and that is, that the eye and the hand must be more trained than they have been until now, and that this may be accomplished without interfering with mental cultivation. Overtasking is a word that has two significations. If we inquire into it closely we shall find that it has two sources—one in the school, the other in the family. I will not go further into this matter here. I am no schoolman. I have no wish to defend the schools, but I contend that the family is equally in fault. Very often young persons are not trained early to habits of order and discipline—to overcome the desire for inordinate indulgence; this is a main point. Enough, I will go no further; only I do not wish that the question of overtasking should be bandied about from side to side as a catchword. I believe that all wholesome instruction can form a harmonious whole in every healthy mind, without fear of overtasking. Head, mind, and heart can be cultivated, and to this end the hand and the eye must not fall short in their aid. Whoever pursues a practical branch of science as I do, knows well that we could not be content with the results hitherto obtained of our training. Whoever observes our young practitioners when they take the knife in their hand for the first time can often see at once how much the want of a technical training of the hand makes itself felt, and will say to himself, "The demand for a better and more skilful training of the hand and eye is a very just one, even with regard to special branches of knowledge." It is a question which cannot be autocratically decided upon by the schools: it is far more, a demand made by the needs of life. We would not, however, forget the schools. Only if the schools refuse to take up this subject—if they say it does not belong to us, or if they go farther and say, "Put no strange fire on our altars"—then let us, if we are firmly convinced that the fire is a true one, build our altars outside the school, for life has its rights. In fifty years it will be impossible to conceive how one has racked one's brains over the question of whether this subject ought to be accepted in the system of instruction or not.

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Professor D. Biedermann, President: With this we have concluded the business before us. I close the meeting with a great sense of satisfaction. This time last year I had the honour to preside over the first meeting for the promotion of manual-skill instruction; it is therefore of great interest to me to institute a comparison between now and then. It is not only that the meeting of to-day is incalculably richer in active participants, and in those whom sympathy

has brought us, than the Berlin one, but now we have brought our proceedings more before the public, whilst we then held our meetings in obscurity. Now we are able to present to the public an exhibition extraordinarily rich in exhibits, whilst last year we could only make a very modest beginning. I think I may say that I have drawn one conclusion from our debate of to-day, which has gratified me exceedingly. Last year people who held different opinions on the cause expressed them with some warmth. The difference of opinion still exists; indeed it has to a certain degree been strengthened and fixed by the fact of its upholders having put their ideas into practical working order; but still it appears to me that these differences, which have not been wanting in our debate of to-day either, have lost their acrimony. I believe that higher and larger-minded views are taken which will have most blessed effects upon our further efforts. If a gentleman of whom it is known that he still stands aloof from us, but that he is not without sympathy for our cause, makes it a reproach to us that we are still groping in the dark, and experimenting, and that we do not rightly know what we are about, I think we may quietly put up with the reproach, for we have a firm grasp of certain fundamental principles. The necessity of supplementing theoretical instruction with practical employment is one which is not only felt by us in Germany, but is one that is very widely recognised elsewhere, as are also certain principles connected with work-instruction. What does it matter if the roads diverge so long as we keep the same goal in view. And now, gentlemen, is it not just the same in the schools? Has not instruction in writing, in arithmetic, and in history been submitted to the most varied experiments and theories, from age to age, and has it ever been doubted that writing, arithmetic, and history are necessary subjects of instruction? If we are still groping our way, and are still in the experimental stage, and must continue there for a time, this ought not to be made a subject of reproach to us; on the contrary, we should be wrong to quit this stage prematurely, and attempt too soon to grasp at final results. The time for that has not yet come. I believe that we have reached solid ground. We are supported from so many different quarters, more especially by the higher authorities, who rightly regard innovations with caution and anxiety. This gives us courage and strengthens us. I believe that we can close this meeting in the full confidence that our work will have been greatly advanced before we meet again, and that the movement will not be a failure, as it has already proved more than once in Germany, but will rise higher and take deeper root. In this hope I close the meeting.

REPORT ON THE EXHIBITION.

THE exhibition of articles from the school-workshop took place in close organic connection with the present transactions of the Congress for promoting manual-skill instruction and home industries. It was held in the Emperor's Hall of the central hall and the adjoining apartments. It has been contributed to by all parts of Germany as well as by Switzerland and Sweden. It affords by its manysidedness not only a highly instructive representation of the different kinds of efforts which have been made up to the present time in the cause of manual-skill instruction, but it shows, by its astonishing richness and abundance, how strong and natural is the effort to effect a reform in our system of education. As it is impossible to have a correct idea of the progress attained by the movement for promoting manual-skill instruction by the Leipsic Congress without a report upon this exhibition, we have prepared one ready for distribution to all those who were not able to be here to receive the fresh and living impression which the exhibition has made upon those who visited it. It is perhaps not too much to say that this exhibition has gained us more friends than the discussions at our meeting. In every case the combination of the two has been most fruitful of advantage both to the illustration of the different standpoints and to the agitation.

On their entrance into the hall the visitors found, laid out in a glass case, a collection of literature on the subject of work-instruction arranged in a chronological order. If the little library got together by the Leipsic friends of the cause makes no claim to completeness, it will still afford to the visitors a useful means of reference.

We will pass over the list of works here contributed, and will only allow ourselves, in the interests of completeness, to give the titles of those books which ought to have formed part of the collection, but which, in the haste of completing it, were unfortunately not included: Pestalozzi: Lienhard and Gertrude, 1781.—J. H. G. Henfinger: How to make use of the strong impulse of Children to be Busy, 1797. The Wertheim Family, 1798.—Salzmann: Little book on Ants.—Blasche: Workshops for Children (four parts), Part 1, Gotha, 1800; Parts 2 and 3, Schnepfenthal, 1801; Part 4, Gotha, 1802.—Gutsmuths: Suitable Employments for Youths and Men; Altenburg, 1801.—Rockstroh: Directions for Modelling in Paper; Weimar, 1802.—Blasche: The principles of Education of Youth to Industry as an object in the general cultivation of human beings; Schnepfenthal, 1804. The Technological Friend of Youth (five parts); Frankfort, 1804. Collection of new Patterns for Pasteboard Work; Schnepfenthal, 1809. How to cultivate Handwork; Schnepfenthal, 1809. The Worker in Pasteboard (fourth edition); Schnepfenthal, 1811. The Cultivation of Nature; Leipsic, 1815. —Gutsmuths: Suitable Mechanical Employments, or practical directions in the art of turning, working in metals, and the grinding of optical glasses, for self-teaching (second edition); Leipsic, 1817.—Blasche: The Paper Moulder; Leipsic, 1819. Handbook to suitable Employment for Children having a distinct object.—Rockstroh: Diversions for the Youth of both sexes, through making for themselves various artificial objects and playthings; Berlin, 1836.—Scheidler: The Life Question of European Civilisation and the importance of the Fellenberg system of education practised at Hofwyl.—Bender: On the Boys' Work in the Workshop (programme of the Bender Institution at Weinheim in 1846).—F. G. Schulze: The Work Question; Jena, 1849.—Kirchmann: The Claims of Nature in the Bringing-up and Education of Children.—Curtmann: Reform of the Public Schools.—Michelsen: The Work-schools in Country Parishes in their authorized working in connection with the regular schools; Cutin, 1851.—Karl Friedrich: On bringing up Youths to Work: a demand of life on the schools; Leipsic, 1852.—Dr. Georges; The Worker, or the practical system of bringing up children at the present time (a periodical), 1856.—Kirchmann: History of Work and Culture;

Leipsic (Gustav Mayer), 1858.—Schallenfeld: The Manual Work Instruction; Frankfurt, 1861.—Beust: The real intuitive Instruction from the lowest steps to Geometry; Zurich, 1865.—Dr. Ziller: Groundwork of the Science of Instruction and Education, 1865.—Frau von Marenholz-Bülow: Work, and the method of bringing up, according to Fröbel, 1866.—Wichern: On bringing Youth up to Work, particularly in Institutions; Hamburg, 1867.—Weinhold: Preparatory Schools of Experimental Physics; Leipsic, 1872.—Dr. E. Schwab: The Work-school as an organic element of the Public School, 1873. On School-workshops ("The Practical Schoolman"; Leipsic, 1874.)—Eckardt: Work, as a means of Instruction; Vienna, 1875.—Hauschmann: Handwork in Boys' Schools; Kassel, 1876 (G. H. Weigaud).—Beust: Method of Teaching Geography, by observing the forms of the earth in the places themselves, and their reproduction in relief; Zurich, 1875.—Clauson-Kaas: The Work-school in connection with the ordinary School and Home Industries (pamphlet—the matter taken from the "Workmen's Friend"); Berlin, 1876.—Eger: The Collector of Natural Curiosities; Vienna, 1876.—Emsmann and Dammer: The Young Student of Technical Works; Leipsic, 1876.—Crüger: The School of Physics; Leipsic, 1877.—Nordisk Husflids-Tidende (the Northern Home Industry Journal); Copenhagen, 1877.—G. Salicis: Elementary Teaching and Apprenticeship; Paris, 1878.—M. Greard: Elementary Teaching in Paris and in the Department of the Seine; Paris, 1878.—Boumann: Het Onderwiss in Handenarbeit en Danemarken en Zweden; Horn, 1879.—Klasing: The Book of Collections; Leipsic, 1878.—Deinhardt: The descriptive works in the public schools; Vienna, 1879.—Raydt: Work-Schools and Home Industry Union; Lingen, a.d. Ems, 1879.—Barth and Niederley: Handwork Book for German Boys (fourth edition), 1879. A First Employment Book for Children (second edition); Leipsic, 1880.—Götze: The Supplementing of School Instruction by practical employment; Leipsic, 1880.—Gustav Gelshorn: The Clauson-Kaas efforts in regard to Home Industry and the Emden Course of Hand-work (separate extract from Schmoller's Annual Register of the legislation, government, and public economy of the German Empire, N.F. Fifth year, numbers 2 and 3; Leipsic, Duncker and Humblot.—Illing: The Nature and Value of the School-workshops; Munich, 1880.—Von Schenckendorff; Practical Instruction: a demand of life on the schools; Breslau, 1880.—Ackermann: In what sense must and ought Instruction to be Practical (report on the Caroline School and the female teachers' seminary in Eisenach), 1881.—Beust: The Bases of Thought taken by Pestalozzi and Fröbel in their application to elementary and secondary school-forms; Zurich, 1881. Relievo in schools; Brislaw, 1880.—Clauson-Kaas: On Work-schools and the promoting of Home Industries, Part 1; Bremen, 1881.—Emsmann and Dammer: The Experiment Book of the German Boy; Leipsic, 1881.—Herzfeld: Handwork and Home Industry (printed as a manuscript); Hanover, 1881.—Koller: Handwork in Schools (the practice of the Swiss Public and Middle Schools); Zurich, 1881.—Lammers: Training of the Hand and Home Industry; Berlin, 1881. North West (a periodical), organ of the Central Committee for Manual-skill Instruction, 1880.—Meyer: Manual-skill Instruction and the Schools; Berlin, 1881.—Riszmann: The importance of the Work-school in the bringing up of Scholars ("Austrian School Messenger"); Vienna, 1881.—Salomon: Work-schools and Public Schools (translated from the Swedish); Wittenberg, 1881.—Wigel: The Little Worker in Relievo; Zurich, 1881.—Wolf: On Manual-skill Instruction and Home Industry; Wurzburg, 1881.—Barth and Niederley: The School-workshop: A Guide to the introduction of Technical Work into Schools (with 103 explanatory illustrations); Leipsic, 1882.—Herse: Manual Instruction for Boys (Bradenburg Provincial Journal Nos. 21 and 22); Landsberg, 1882.—Kellner: Fröbel's System of Education; Stralsund, 1882.—Riszmann: History of Work-instruction in Germany; Gotha, 1882.—Urban: Home Industry in Denmark, and its transplantation into the Silesian Notstand Districts: Oppeln, 1882.—First Yearly Report of the Union for Manual-skill Instruction in Görlitz, 1882.—German Games and Employments (journal, edited by H. Elm); Stralsund, 1882.—A. S. Zwitzer: Pestalozzi's opinion of Hand-work: Monthly Journal of East Friesland, VIII., 9.*

On the exhibition of school-workshop works we have drawn up the following report on the separate divisons:—

If we begin with the south, Switzerland was represented by very interesting geographical models from the workshops of the Beust Institution in Hoffingen, near Zurich. These productions were pedagogically instructive in a high degree, because they showed the close connection between the scholars' journeys on the map, and the sectional reliefs made with the leaf-saw. In this way the boy *must* learn to understand the map whether he will or not. Besides this, this exhibit was almost unique, because through it the possibility of class instruction in the school-workshops was demonstrated. As the tedious process of working in relief could not keep pace with geographical instruction, if every scholar were to work in relief for himself, it seemed quite a natural resource to fall into the way of working in groups.

The activity of the teachers and pupils (boys and girls of from eight to thirteen years) is shown by the following list:—

1. Day-excursions. The following may serve as a sample of the observations: Heavenly bodies: meteors. Water: swamps, lakes, springs, brooks, rivers. Different species of stone and rocks; peaks of hilly country and of the high mountains; valleys, plains. Culture of the soil: field, garden, meadow, vineyard, forest, and peat land. Plants: non-flowering and flowering; mono- and di-cotyledonous. Animals: molluscs, worms, arthropodous animals, vertebrate animals. Human beings: teachers, scholars, others. Antiquities. Dwelling. Manufactures: fabrics, machines, implements. Locomotion: by land and water. Determining the time: setting out, arrival, rest, return home. Highest point of the journey: watershed. Occurrences.

2. Talking over the journey in class.

* The following works have appeared since the publication of the report: Biedermann: The Education for Work: a demand made on the schools by life; Leipsic, 1883.—Hugo Elm: The German Manual-skill Instruction in theory and practice; Weimar, 1883.—Gelbe: The Manual-skill Instruction; Dresden, 1885.

3. Drawing a map of the ground gone over on the journey—(*a*) from a pattern map on the blackboard; (*b*) in a reduced net-work of parallels.

4. Study of curves in a large relievo in wood with horizontal strips of equal thickness, which can be taken off.

5. Manufacturing a relief in sawn wood or cardboard.

6. Mathematical geography, with drawings of different projections and the erection of a globe of pasteboard, wood, or tin and wire.

The articles completed by classes of from twenty-five to thirty-five scholars are maps, relievos, and a globe. The maps are manufactured from the simplest materials—ink for the boundaries, rivers, railways, towns, and houses; red and black chalk for the high curves and shadows of the mountains, aided by the stump; and a little pale blue colour, lightly rubbed in, for the larger masses of waters, seas, lakes, swamps.

Exhibit *a*, under the third head, is an example of a map of a school journey which has been drawn for the class on the blackboard: the High Etzel, scale $\frac{1}{25000}$, red contour-lines for every 100 metres, the water blue, in a net-work of squares of 6 centimetres.

Exhibit 3*b*, is an example of the manner of treating the map of the journey, with the curves already marked out and preparations already made for the work in relief, the map of Aathal ($\frac{1}{50000}$; contours at 60m.) was treated in two different ways. On the one map the higher portions were marked out with distinctive colours; on the other the heights were shaded, lakes and swamps coloured blue, railways and villages more definitely outlined with ink. In the same way the maps of the environs of Zurich have been treated ($\frac{1}{100000}$; contours at 100m.) made collectively by the class; of Lägenberg ($\frac{1}{50000}$, contours at 30m.); of Rüti Wald ($\frac{1}{40000}$, contours at 100m.); of Vindonissa ($\frac{1}{25000}$, contours at 50m.); of Kyburg ($\frac{1}{12500}$, contours at 30m.) Always one specimen of each manner of treatment.

Under the fifth head, eighteen relievos of Aathal were exhibited, and one similar one of each of the other maps named. Relievos were executed collectively in class in systematic course, and without exaggeration of the perpendicular height. In the school year just over there were sixty-three relievos in all constructed. For this work the children get the wood, the cardboard, and the contour-map, all in a rough state; and as work material, lime, colour, Indian ink, gum and varnish; and as tools, fretwork-saw, screw-vice, hammer, pincers, and a pencil. The work produced proves incontestably that the scholar has a correct intuitive comprehension of the ground gone over, and can thoroughly understand a topographical map. The knowledge acquired by working out the map of the most important of the Alpine passes is very valuable. This is 14 square decimetres in size, is on a scale of $\frac{1}{450000}$, and has a separate layer for every 1,000 feet up to 5,000, and one for every 2,000 feet above that height. The children have coloured the lakes blue, the ground less than 1,000 feet high dark green, over 1,000 and up to 2,000 light green, and shaded the mountains and the passes, after a careful examination of the teacher's representation on the blackboard.

Under the sixth head was exhibited the framework of a globe of 20 centimetres through, the axis of the earth made of strong wire, the plane of the equator, and two rectangularly disposed meridian planes of zinc, the tropic and polar circles of wire. It serves to demonstrate mathematical geography, especially for ocular illustration of geographical length and breadth conceived of as angular. By putting a little piece of cardboard of a suitable size in the correct position, Switzerland is indicated.

With the geographical exhibits of the institution of Gustav Wiget, in Rorschach, this part of the exhibition ended. They comprised a relievo in plaster of the Canton St. Gallen; a relievo in clay of the Canton Zurich; a relievo in paper, part of the Canton of Bern, according to Dufour's map; and a relievo of the Wiget Institution. The last relievo, as well as the map of the mountain peaks in the Canton of Bern, which distinctly indicated the formation of the Swiss Jura, excited the interest of many of the visitors.

Strasburg was represented by work in wire and wood. The neatly-finished objects (bootjacks, polished writing-cases, rulers, wire-baskets, &c.) showed clearly the practical standpoint adopted there in their efforts in favour of manual-skill instruction.

Pforzheim displayed articles from the boys' work-school and the workshop of the Gymnasium. These consisted exclusively of work in carved wood. In the written explanation accompanying them it was to be seen that two courses had been gone through at the Gymnasium; the first from the 17th November, 1880, to July, 1881, in three divisions of fourteen scholars each; the second from November, 1881, to May, 1882, in two divisions, consisting of thirteen scholars each. The scholars belonged to the classes from the sixth to the upper third; they were employed on the work two hours every week, the days selected being the half-holidays. The work was entirely executed by the scholars themselves after previous courses of general instruction. Active help was only given by the teachers in cases of necessity. One particular line of subjects exhibited (the leaf-patterns, key-holder, bunch of grapes with leaf and branch, music-stand, reading-desk, writing apparatus, picture-frames, tanner's knife, rose with stem) gave an idea of the difficulties surmounted in the gradual progress of the work. This course of teaching and the work of the boys' work-school afforded a very complete representation of the industry practised in Pforzheim.

The four work-schools in the District of Waldenburg (Silesia), Upper Waldenburg, Dörnhau, Wüste-Giersdorff, and Gottesberg sent fretwork, joiner's and turner's work, carving, brush-making, basket-making, and pasteboard work. (1.) Fretwork: Lamp-stand, tinder-box, cigar-stands, writing apparatus, toilet boxes, stand for vinegar and oil, combination game. (2.) Joiners' work: Cupboards for children's kitchens, knife-boxes, salt-boxes, coalscuttle-boxes, bootjacks, picture-frames, dolls'-rooms. (3.) Turners' work: Ninepins, pegs for wardrobes, camp-stools, garden-seats, children's swings, sofa-table. (4.) Carving: Ornaments, studies of leaves, picture-frames, writing apparatus, holders for keys, little key cupboards, different kinds of small boxes. (5.) Brushmaking: Clothes-brushes, dust-brushes, blacking- and polishing-brushes. (6.) Basket work: Baskets with handles, cherry-baskets, knife-baskets, work-baskets, wall-baskets, paper-baskets,

market-baskets. (7.) Cardboard work: Different kinds of boxes, geometrical bodies, watchstands, match-boxes, cigar-stands, wall-baskets.

The main object of these works is—(1) That the boy as he approaches manhood should be enabled to make for himself all kinds of objects of household use and ornament, whilst during his leisure hours he would always find some employment at hand; (2) to prepare the boy, by rendering him skilful with his hands, for his future calling as an artisan; (3) that the worker, having learnt to employ himself in useful and pleasant work, should make his dwelling pleasant. The objects displayed bore witness to the fact that the above-named schools had done their task well.

The Görlitz Manual-Skill Instruction School, to which the Exhibition Committee had in the most obliging manner given up one of the best situations in the middle of the hall of the Exhibition—a part of the Leipsic Exhibition, and a part most worthy of attention, was modestly placed in a corner, and a not very well lighted one—was arranged in three divisions—viz., modelling, carving in wood, and pasteboard work. The objects modelled, which were moulded in plaster, were mostly flat ornamentations, and showed more easily than the more difficult arabesques, leaves, blossoms, and boughs. Next to this was the Görlitz crown modelled in plaster. Productions which already may be classed as art productions were a profile in relief of our Emperor, and a bust of Fröbel, life size, placed on a pedestal. Both may be considered as successful; they are the work of a teacher who attended the course of instruction as a scholar; he still attends it. The wood carving showed leaves, twigs, arabesques, photograph frames, watchstands, bookstands, and a basket copied from a Northern pattern, and marked with the most finely-cut indented pattern, which excited the wonder of the beholder. This was the work of the same teacher who exhibited the bust of Fröbel, &c. We have learned since that a year ago this teacher could neither model nor carve in wood. If proof were wanting of how much individual talent is wasted for want of the necessary guidance, how much is lost to art and trade, then this precedent ought to be brought forward. In the pasteboard work we saw maps, little baskets, geometrical forms, boxes, inkstands, kaleidoscopes, as also the simplest forms of elementary work, so that by their means it was easy to see step by step the progress of the instruction.

From the scholars' workshop of the Utilitarian Society in Dresden there was displayed a group of scholars' work in wood and pasteboard, which clearly showed the progress of the instruction in the workshop there as well as its principle. The works in wood begin with the round stalk of a flower (requiring the carving bench and round plane); then follows the putting together of the round stems for flower stands and window stands (for flowers); in connection with these comes the treating of flat boards by means of saw and plane, and by the aid of the different joiners' appliances (nails, screws, foot rules, bevel, tacks, &c.), the following articles were made: Stilts, bootjacks, consoles, inkstands, boxes for wax, footstools, stools of natural wood, knife boxes, wedges, levers, pendulums, pendulum stand, pumps for water; and thus made up the four groups of useful works—(*a*) For games and entertainments, (*b*) for household use, (*c*) for school use, and (*d*) a group specially referring to learning or intuition. The work in pasteboard tells the same tale as we have just repeated. It begins with the treatment of the plain board: plan of lessons, magic pockets, diaries, maps. To these were added boxes with perpendicular and oblique sides, as money-boxes, cups for holding ashes, glove-boxes, wall baskets, kaleidoscope, camera clara and camera obscura, stereometrical forms for the intuitive perception of the working of the square and cube roots, &c. Beside these Mr. Teacher Kummer, who had given lessons in the scholars' workshop in Dresden, showed the result of a course of instruction in pasteboard, illustrated by fifty exhibited models. Laying great stress upon instruction in geometry, he teaches the construction and the application of it; whilst out of the purely geometrical forms, objects of use in practical life are formed which beautifully illustrate his adopted motto, *Aus der schule für das leben.*

The Leipsic Exhibition was classified into several subdivisions. It was intended by these to demonstrate the great variety of development of which the idea of work-instruction is capable. In the four divisions were exhibited articles from the Deaf-and-Dumb Institution, the Barth Training School, the First-class Real School, and the Leipsic Scholars' Workshop. From the Deaf-and Dumb Institution, in Leipsic, varied works done by the fret-saw and in pasteboard were exhibited. The latter (little boxes to hold minerals, boxes of various sizes for keeping objects connected with teaching), cardboard drawing tablets and copy-holders stretched and bound round the edges, small stitched books, maps, &c., showed particularly that the dexterity of hand of the pupils could be directly turned to account in the service of similar institutions.

In order to show the connection of the kindergarten work with that of the school-workshop, the Barth Educational Institution exhibited some experimental work from their elementary school. It consisted of articles in paper, made by children of from six to eight years, which sufficiently showed how necessary it is to begin the exercising of the hand and eye as early as possible. The small objects in paper worked from Barth and Niederley's "Child's First Employment Book" were a proof of the degree to which a child, that does not yet know how to hold a pair of scissors, can learn to measure by its eye.

A small side compartment of the great Emperor's Hall was filled by the exhibits from the Leipsic 1st Order School of Art. This exhibition, which presented great variety of form and colour, deserves a special explanation, for it does not literally represent the work done in a school-workshop, but it affords internal evidence of being intimately connected with our efforts. Everything to be seen here is the work of individual scholars, without direct supervision, done at home, in leisure hours, and for their own pleasure. Every object in this exhibition is a means of intuitive learning, such as the school gladly avails itself of. They were called into existence through the school instruction, and at the suggestion of the teacher, who said: "It would be a good thing if those who wished it were to make such and such objects in this way or that." So that the whole of this small collection bears witness to two important facts: First, that amongst the young people the wish and the ability to "bästeln," as the Saxons say, has by no means died out; and second, but not less important, that this skill may be made to be of the greatest service in the school instruction.

The great table in the middle and the walls at the entrance were taken up with physical and chemical apparatus for scholars. For, indeed, ever since 1866 Professor Dr. Rud. König has tried to stir up his scholars from the second class to the upper first to make themselves useful to their fellow pupils in the way indicated, and the wished-for power was always forthcoming. Youthful turners and joiners were found who constructed differential axles, inclined planes, and double skittle balls, that run uphill, all neatly turned and polished. Others made models of different ships' screws; another constructed a working model, which gave a side view, and also showed the interior construction of a locomotive; another, again, with great skill and patience, blew out of a broad glass cylinder a spiral, the elasticity of which was the wonder of all. Many wall-tablets, such as could not be purchased, were drawn to a large scale by the scholars for this instruction, and properly coloured in the natural hues. Pictures of physical and chemical apparatus were exhibited; plans for heating and ventilation; model representations in the department of telegraphy, telephones, the manufacturing of gas, &c. There is no doubt that such products of individual industry must have a very stirring effect upon the coming generation.

At a small corner of the table the eye was refreshed by a group of scholars' work, done at the instigation of Mr. Fedor Flinzer (Headmaster of the School of Art, and Inspector of drawing instruction to all the town schools). It consisted of a small forest-party, with a wood-pile, a cottage, a spring, neatly decorated little tables, chairs, &c., as subjects for drawing from nature. Then come several little boxes, a reading desk, silver ornaments on an album; everything worked by the fret-saw, with the most earnest attention to good taste.

Finally, the walls were covered with aids to intuitive instruction in geometry, geography, astronomy. Scholars from the third class up to those of the upper first had proved their skill on them. The materials and modes of working were both most varied, just as the necessity arose for using them. If the teacher (Dr. Böttcher) knew that he had a tolerable locksmith in the class, he got him to construct a filed and hammered handle, by means of which geometrical forms could be brought into any position, and a model in wire of the transit of Venus of 1874: and two bells made of the largest meshed gauze wire, soldered together, were made to represent the celestial sphere. If another scholar could do a little joinery, his talent was turned to account. Wood, cork, pasteboard, paper, glass, gelatine paper, silk thread, knitting needles, wire, gum—whatever was of use or whatever was at hand—must at one time be made to serve in making a hyperboloid or paraboloid, at another time a straight or oblique cylinder, or polyhadral figures; in the making and setting up of sundials, making a model of the surface of the Rochlitzer Mountains, determining the local time of every part of Saxony, Germany, and of the earth, or giving a correct representation of the last eclipse of the sun by means of moveable discs. However varied this medley may have been, and however little these objects were fitted to become models for a workshop course, still one impression of great value appears to have resulted from them, namely, that the school instruction may be made use of if the scholar is no blockhead.

The exhibition of the Leipsic Scholars' Workshop was divided into two groups. In the one the works were arranged on the basis of the four different workshop courses—courses in pasteboard, wood, metal work, and modelling. The manner in which these were treated depended on the material. In the other group the works were executed without regard to the material, but in strictest accordance with school rules, with which they stood in the closest connection. (See Report of the Leipsic Scholars' Workshop by Dr. Götze in the Transactions.) The course for pasteboard work exhibited a number of objects by means of which were displayed the fundamental principles of manipulating pasteboard. The magic pockets, with parallel and crossed bands, showed the cutting of two layers of pasteboard perfectly corresponding: by this is taught how to produce pasteboard work with rectangular and sharp edge, as well as how to line and cover the flat surface, the borders, and edges. The small cases with worked edges and projecting cover brought into notice the way of lining hollow spaces, the covering of the outer straight sides, and the turning down at the corners of the flat surface of the bottom and the upper brim. The drawers showed similar work in a somewhat different form; further progress was seen in those cases which had separate compartments, and covers which were hung on hinges. If these works showed how the perpendicular sides which reached the bottom were managed, then the six-sided baskets showed the way of cutting and putting together of works with sloping sides. The cutting of sheets (of pasteboard), and the treatment of them in covering is shown by the maps, as well as the making of pockets with extending folds. Those kinds of pasteboard-work which required to be bowed either from without or within, were displayed by the concaves and convexes of the wall-baskets. With bookbinding, the display of flat and plain surface working ended. Napkin rings and penholders served as examples of cylindrical and bowed work.

The exhibition of wood-work next showed the progress of the scholars' course. After they had got used to different kinds of saws they were put to work with the plane—smooth-planing, planing a flat surface, planing solid bodies, planing edges, planing four- and eight-sided posts; from this they proceeded naturally to round rods, four-sided pillars cut into cubes, angle-joints, pegging and dowelling, &c. There were also rulers divided into centimetres and polished; caskets, dowelled and with corners rounded off; picture frames, with flutings; corner shelves with volutes; butterfly boxes, a reel for winding yarn on, camera obscura, simple electrical machines, and other similar things. Boys who were not yet able to draw, executed splash-work on prepared boards. Besides these there was some very neat work done by the fret-saw, as, duster-boxes, picture frames, &c.

The exhibition of the teachers' course showed the same course of instruction, only the following things were added: Footstools, with chiselled borders and rounded tops; different kinds of flutings; a model of a weighing-machine, for the purpose of displaying the principle of its construction. Besides these there were many well polished articles to be seen, such as picture frames, and a jewel box ornamented with an artistic arabesque painting, by the Inspector of Drawing, Mr. Flinzer; a highly practical stereoscope; a shelf, veneered with nut-tree wood; a polished corner shelf; also a safe (constructed out of the boards taken from old boxes), the locksmith's work in which excited great interest amongst artisans. In the exhibition of wood-work there was a clock for plac-

ing against the walls, the wheel-work of which was constructed—by an earlier participator in the teachers' course—entirely of wood, and by means of the fret-saw; this clock gave evidence, by its quiet and sure action, of the industrious and accurate work which had been bestowed upon it.

The exhibition of the manual-skill productions of the Leipsic scholars not only emphasised the aid given to ordinary school instruction, but also its own special position, by so doing, showed that, besides the work executed in pasteboard, wood, and the modelling, it exhibits similar articles made in metal. The doubt might well have been entertained whether scholars would be able to perfect any work in this comparatively difficult material, but the possibility of their doing so was proved here, and this work, which was the result of much patient and loving effort on the part of the scholars, awakened much interest.

As aids to geometrical instruction the following objects were made out of brass wire: equilateral triangles, squares, cubes, tetrahedron, &c.; and out of plates of zinc, iron, and brass, prismatic vessels, and caskets of prescribed size were manufactured—namely, cubic centimetres, cylindrical vessels, jars, coffee pots and milk vessels.

In optics, an industrious scholar exhibited a very well-finished magic lantern. In connection with the instruction in proportion a decimal weighing-machine was exhibited to elucidate the principle.

Besides these objects, which were directly subservient to scholastic instruction, there were a great many others which had reference to family or house wants or to games—namely, simple practical apparatus for hanging on the walls for the display of valuable plates, simple stands for drawings, miniature safety match-holders, magic apparatus, chains, paper-holder made of wire, a bore-screw, trellis work for the window for flower-stands, iron-work of doors, lucifer match-holders, a miniature washhand-stand set, a letter-box, a safe of wood and metal, and a still unfinished chandelier. Much satisfaction was expressed at the practical carrying out of a plan for fastening home-made hooks and eyes in a large piece of sandstone by means of plaster and wood.

By exhibiting these objects testifying to great industry and great accuracy, and serviceable besides to scholastic instruction and to family life, the scholars are taught to hew metal, to cut it, saw it, solder, rivet, bend, hammer, file it, to treat it when red hot, to harden it, to grind it, &c. In this department of the exhibition the fact is clearly recognised that theory and practice have taken each other in a friendly way by the hand, and one feels more strongly than ever how good a thing it would be if in the interests of this employment of our young people at school they were relieved from the pressure of too much mental exertion, if theoretical instruction were assisted more than heretofore by such work, and they were by this means better fitted to take their part in practical life.

The modelling department showed the whole course of instruction, which was as follows: Treatment of material; forming in clay; the mixing and pouring out of plaster. Exhibition of an even surface cut from an irregular piece of plaster. (Work.) Aim: Schooling the eye for rightly seeing and understanding even surfaces. Use of flat surfaces: How to cut a cube out of a rough piece of plaster. (Work.) Information as to the shape, edges, angles, planes of the same. Use of flat surfaces: Obliquity of sides at a given angle. (Model.) Further obliquity of sides until they form a circular ring. (Model.) Curving the flat into cornices. (Model.) Use of cornice-shaped surfaces for idealised-leaf forms. (Model.) The copying of idealised-leaf forms from models, in clay. Casts of the completed works in plaster. Repairing of the same in and with plaster. Putting together of single-leaf forms in order to form a rnning pattern. Application of the acquired skill to working out in plaster a given pattern. One of the scholars did such a piece of work, an enlarged copy from a drawing of an entablature tile; this he did by himself, and his work far exceeded the expectations of his teacher. In consequence of this extraordinary evidence of talent this poor scholar is sent to the town commercial school, and later on is to be sent to the School of Art.

The second principal group of objects exhibited by the Leipsic Scholars' Workshop represents such productions as stand in closest connection with scholastic instruction. These works must not be taken as the ordinary sample of the industry and skill of the scholars at the present time in the scholars' workshop, because the greater part of these scholars, who attend school in the winter quarter, had left at Easter and had taken with them as their own lawful property the completed works, to which the scholar who has finished them is always much attached. For this reason the visitor will find a smaller number of works of any one kind, but rather a collection of models of the most varied kinds of work, which will serve as aids to the intuitive perception to the pupils.

Collections of articles were not, as is usually the case, arranged according to the material of which they were composed, but (according to the method of the Herbart-Ziller School Workshop) with reference to the different departments of school instruction. Thus the works connected with mineralogy, for example, were placed in four mineral-cases made of previously-prepared pasteboard. Besides these there were casts of originals taken from the fossils found in the coal-stone formation of the Jura. Botany contributed a quantity of plaster casts of twigs, leaves, and fruits, besides a collection of seven different kinds of cones of fir trees in frames covered with glass. In zoology there was the skeleton of a water-frog in a glass case, a dissected cockchafer, and two crabs showing the upper and lower sides of the body.

Of works in geography there was exhibited a relievo in wood, having the equal heights indicated by fret-saw work, which might be made useful in instruction both in German and history, as it bears a relation both to the history of Switzerland and to Schiller's "William Tell." There was besides a quantity of apparatus for mathematical geography displayed: for example, a telescope for taking the different altitudes and the latitudes, the results of which were made evident by horizontal lines of wood, in which the diurnal arc and the meridian were shown by means of a piece of brass wire. A similar apparatus was made entirely of bronzed paper, and showed throughout great completeness. By means of numerous silken threads it showed the direction of the sun's rays, how they strike the horizon of Leipsic at the times of the solstices and equinoxes. On a pasteboard wall tablet the German meridian was pointed out by means of threads strained

over a globular projection; and beneath these a movable card gave the difference in time of the different places in Germany. A sphere made of brass wire half a metre in diameter showed the relative position of the earth to the sun, and to the signs of the zodiac at the changes of the seasons. This ended the groups referring to mathematical works. Here belongs a six-sided cube of pasteboard made to show the actual size of a cubic decimetre (1 litre), a cubic centimetre ($\frac{1}{1000}$ of a litre), the square $(a + b)^2$, and the cube $(a + b)^3$. Besides these there were bodies made of wire with very fair soldering-work, part fixed, part movable. There were also forms, constructed of pasteboard, as cylinders, and four- and six-sided pillars. Here modelling was displayed in its very beginning, by cubes cut in plaster and by three-, four-, and five-sided plates. The before-named forms in wire, as tetrahedron, hexahedron, and octohedron, showed the transition to physics, inasmuch as they were applied to the beautiful planes of soap figures. When these wire forms are dipped in a vessel standing close by containing soap-water, the operation of adhesion and cohesion is seen in a quite peculiar way. One special group is formed of objects connected with optics. For displaying the complementary colours a very large apparatus after Nörremberg was exhibited, as well as a smaller one made of pasteboard for use in class instruction; another apparatus of wood and pasteboard explained the reflection of rays of light; again, another served to elucidate the principles of perspective; and yet another showed how deceptive was any measurement usually made by the eye, which continually made the beholder draw false conclusions. The camera obscura was brought forward in four different forms; sometimes without a mirror, so that the representations stood on their heads; sometimes with the mirror placed above, or with one put in the inside. Finally, we remember a camera clara. For the representation of mechanical ideas there were Segner water-wheels in two different forms, as well as a model of a turbine, with lamp cylinders according to Weinhold's plan. Added to these were syringes, centrifugal rings, and centrifugal channels, as well as a stand to which several rollers and pulleys were attached; and, lastly, a Fessel rotation apparatus. For expansion by heat there were two contrivances: one, a very simple one, by Weinhold; and another more complicated. Magnetism and electricity were brought under notice by a horizontally-placed electro-magnetic rotation engine, and a very much-liked plaything, "ano-katho." A large number of framed heraldic seals on the surface of the walls belonged to a very simple contrivance for the use of galvanic plastic art. It consisted simply of the bell-shaped glass cover of a butter-dish turned upside down, the knob inserted into a piece of a board, and a stand of copper-wire. Near this lay some objects which served to illustrate it—*e.g.*, a wooden stick, a gutta-percha stamp, and a copperplate impression taken from it.

The work-school in Salzunger, in Thuringia, showed work with the plane, the lathe, and the fret-saw, and coarse basket-work; all done by boys of from ten to fourteen years old. The articles were kitchen utensils, pockets to hang on the walls, letter-boxes, frames, key-holders, a straw carpet, list carpet, children's furniture, flower-sticks, window-clasps, garden furniture, &c. The specimens testified to the great care and industry of their makers. Many of the articles were faultless.

From Aschersleben a teacher sent specimens of leather painting, which rather belonged to the province of home industry. One of these was a screen for the stove, another a corner bracket, a pole for a *portière*, and a large number of single shapes, leaves and tendrils. Waste leather was used in making these, partly in its natural colour, and part was slightly coloured; they were lacquered, and placed either over one another or close to one another, scale fashion, and there made fast.

Osnabrück, which follows closely in the footsteps of the Swedish Slöjd, showed, besides kitchen utensils—some of which were polished—caskets, frames, bookbinders' presses, and other objects, as well as most excellent carved work.

Mr. Teacher Biemann in Bremen exhibited an abstract of the course of instruction carried on in the Slöjd Seminary in Naas, in Sweden. The work showed the greatest neatness and accuracy of finish. In wood-work there were instruments for measuring and adjusting angles, axe-handles, measures, knives, rulers, clothes-rails, &c.; also, in carved work, spoons, picture-frames, &c.

St. Peter's Orphanage at Bremen supplemented the above exhibition by showing what objects can be produced in closed institutions. There was basket-work, different kinds of brushes, inlaid work (little caskets, rulers, visiting card-cases), fret-saw work, and pasteboard work. This exhibition was another proof of how well adapted the residential system is for advancing the instruction in manual work.

The private work of Mr. Bücking, Building Inspector in Bremen, displayed an artistic finish which one does not expect to find in an exhibition of handwork; it should serve as practical evidence of the principles laid down shortly before by its originator in "North West." Amongst the objects of art in old German style were a toilet mirror, with jewel-case, a magnificent carved wood jewel-case with clasps, glove-boxes, cigar-cases, ink-wipers, small cupboards for the wall, duster-boxes, dish-cover, holders or cases; besides these there was a map with drawings and photographs, designs for furniture. The locksmiths' work on the various articles was executed by master-locksmith Kruse, in Bremen. These artistic and tasteful objects would have found a fitter place in an art exhibition had they not been intended to represent a certain class of ideas.

The work done by the school and poorhouse of Hamburgh is on the footing of home industry. This school is carried on with a view to profit; this is seen by the nature of the exhibition. Very pretty work was displayed in cane- and wood-work—as seats, garden tables, and stools; as well as in plaited work of wire, straw and bast matting, more plaited work from the cuttings of cloth (shoes and slippers). This exhibition showed of what great use to such an institution the instruction in manual skill is capable of being. The taxes for the maintenance of the poor might be perceptibly lightened, and the poor themselves be led to perceive the blessedness of work, and be gathered again into the bond of fellow-citizenship. Instead of buying tools for such people, which they invariably carry to the next brokers to exchange them for brandy, let work-places be established in which they can have the opportunity of earning their alms.

From Mecklenburg came four interesting works: A statuette of the Emperor and one of a lion,

both the work of a country boy of from eleven to twelve years old, both carved out of wood, without any instruction or hints; and two jars of ivory and buffalo horn, both turned by a countryman. The two first works gave unmistakable evidence of the artistic gifts of the boy who finished them; the last were remarkable as the production of a *dilettante*.

Finally, Mr. Director Salomon, from the Seminary at Naas, in Sweden, sent, in the most generous manner, a collection of models, together with a rich assortment of tools. The exhibition showed itself worthy of being specially supported, by the rich abundance of its exhibits as well as by their great accuracy; this was certainly in part due to the Swedish woods, which are finer than ours. The objects were examples of plane-, lathe-, and carved-work—as garden furniture, kitchen utensils, bookbinding-presses, window frames, seats, levels, caskets, poles, &c. The models, as well as the excellent collection of tools, were intended as a gift to the Dresden school-workshop.

If we look back upon all the efforts which have been made, whose very existence has been brought to light by the Congress for the advancement of manual skill and home industry, the earnest hope arises within us that at last all this energy, which is so freely spent, may succeed in changing into action the perception of the necessity, not only of giving the rising generation a certain amount of acquirements, but also, by means of work, of making them capable of holding their own, and establishing good, moral, useful characters. May it succeed in delivering our schools, overloaded with subjects of instruction, from many qualms of conscience, and in turning the overburdened scholars, especially those of the upper classes, who are now often quite *blasé*, into fresh, joyous, young people, who will enter upon life with healthy minds. May the bringing up of our young people to work, which is a national question of perhaps unfathomed importance, at last become a reality and a blessing to our beloved fatherland!

APPENDIX IV.

To Leipsic's Scholars.

Attend to what is said here, for it concerns every right-minded child.

Each of you that intends one day to be a complete man will not be content with watching the industrious artisan at his work, but will desire to use for himself hammer and pincers, plane and saw, file and soldering tools, with modelling-block and carving tools. You will find every opportunity of doing all this in the scholars' workshop.

You are not to be trained here into artisans; for this the short space of time free from other studies would be quite insufficient, but you are to be made more dexterous, more skilful than the greater number of you are at present. How many of you can hammer a nail straight into the wall without hammering your finger at the same time? How many of you can make a kite which is properly balanced and which will fly high into the air? How many of you, when the iron of your skates become loose, can mend it yourself without running off to the blacksmith? The greater number of you cannot so much as sharpen a pencil or cover a book properly.

You have a box of tools given to you at Christmas, and after one or two unsuccessful experiments you put it in some corner to get dusty and covered with rust, or you make attempts with a fret-saw, you break to pieces a few dozen saw blades, and, if the tasteless pattern ever is finished on the lid of the cigar-box, you carry the separate pieces to the joiner that he may piece them together, and thus do the most important part of the whole work, the putting it together. Then you give it away as your own work.

This is just how it is, boys; the majority of you do not know how to make good use of your hands. Instead of having a good romp together and sometimes a tussle, you are always sitting moped up in the house skimming through one book after another. If it comes to putting your hand ot anything useful, you are entirely at sea. What would have become of you in Robinson Crusoe's place? The probability is that you would have perished miserably.

This state of things must not go on. If the scholars' school studies are finished, and if his family makes no claim on his time, the right-minded boy will set off in summer to the play-ground and swimming-bath, and in winter to the skating and the carpenter's bench. Whether he works lustily at his lathe, after his long sitting over his books, or whether he is developing still further the sense of the beautiful, which has been aroused in him by his drawing-lesson, by modelling or carving in wood, or whether he is engaged in making the apparatus necessary for his simple physical experiments, or fashioning little presents for the dear ones at home, it must always be a real pleasure to him to work in the cosy workshop in gay fellowship with other workers, while the winter storms rage without and the evenings are long. And such delights as these have been enjoyed by hundreds of boys in our workshops for these last three years.

Those who have neither good tools at home nor the necessary space to work in, who have neither proper material or guidance, must beg permission of their parents and coax them to let them visit the scholars' workshop in the old Thomas School. The contribution towards the expenses which has to be paid is not much, and poor scholars are received gratuitously. None who behave properly, and come with a right good will to do their best, will be excluded. But those who at the start seize upon the new idea with ardour, and after a few weeks, when the work becomes more difficult, stay away perhaps on account of toothache, they had far better not come at all.

Schiller says in William Tell: "A good shot can help himself;" and further, "He who would be a master trains himself early;" therefore, you boys, make use of the chances which are offered to you. The COMMITTEE of MANAGEMENT, Scholars' Workshop.

The workshop courses in pasteboard, joinery, lighter metal-work, modelling and sculpture, take place on Wednesday and Saturday afternoons. Plans of the studies can be had in the cloth warehouse, B. J. Hansen, 14, Market Place; in the paper warehouse, Mating Sammles, Peter Street, 10/11; in the bookseller's shop of Heinrich Matthes, Schiller Street; also in the Industrial Art Museum, Thomas Churchyard, 20, during the visiting hours; also on Wednesdays and Saturdays from 3 to 4, in the Exhibition of the Scholars' Workshop, old Thomas School, left door on the first floor.

APPENDIX V.

TO THE TEACHERS IN LEIPSIC.

Scholars' Workshops, Leipsic.

THE undersigned beg that they may be allowed to address a few frank words to their colleagues.

The Committee of Management of the Scholars' Workshop, by whom we are charged to do this, addressed an appeal, as you are aware, to the scholars at the beginning of the winter half-year inviting them to take part in the workshop courses. This appeal has been responded to so numerously as to be a subject of the most gratifying surprise. About 550 scholars have notified their intention of joining. These are to receive instruction in twenty-five divisions. Besides these a large number of scholars who have applied for gratuitous instruction will have to be refused on account of not getting a good character from their masters. Those who applied for admission too late will also not be received. We see in this eagerness to take part in the courses a proof of the great wish every healthy boy has to busy himself in some practical work. In great cities this is not taken sufficiently into account. If any opportunity arises of gratifying this inborn tendency boys at once hasten to take advantage of it. There are many parents who understand the movement and know how to make use of the natural pleasure a boy takes in work, and turn it to account in his education, and so give him a greater amount of skill and practical sense in his way through life than is the case at present.

If, as we anticipate, every boy who is won over to a liking for practical work, helps us on with the farther spreading of the scholars' workshop; if the parents are convinced of the favourable effect which physical work has on the development of their children, then we shall soon see that our great want will be more teachers for the scholars' courses. To go still further, there is the notion of refuges for boys, whose great aim it would be to keep in view the possibility of guarding them from evil as well as rescuing them from its consequences. When this idea gradually gains ground with us, as it is likely to do, then the demand for capable teachers of practical work will become even more pressing.

We have therefore decided to make an earnest entreaty to our colleagues to make themselves better acquainted with our movement, if it is only to make a quiet investigation of its operations and learn to know all about it from their own personal experiences.

We make our request more particularly to those who have tried the work themselves and are quietly in favour of it; we call upon them to deepen their interest in the working of the instruction by an active perception, which is only to be had though the scholar's own participation in it. If the teachers could only be induced to unite their power, which is so great, to our exertions, and thus give greater force to our operations! We venture to address this prayer to them in the firm trust that the teachers of Leipsic, who are developing in such a free, sound way the school system, and doing this in such a kindly spirit, will understand how to distinguish this from those unpedagogical movements, which, instead of forming a preparation for future life, would hurry the work prematurely into the schools, and transform them by this means into industrial workshops. They will see the difference between this conception of the subject and ours—ours, which is the same as

Rousseau, Pestalozzi, Lahmann, Fröbel, Herbart, and Ziller have assigned to it in the educational system. They must see the difference between that which aims only at profit, by hand-work more or less mechanical, and our work-instruction, which wishes to be nothing more nor less than a means of inciting the child to set to work and act for himself, to lead on to a further intuitive instruction.

We therefore invite those of our colleagues who take an interest in the training to work and are favourably disposed towards practical activity, we invite them most heartily to take part in the courses for teachers at the scholars' workshops. In order to render it possible for teachers yet to announce their intention of joining us, it has been decided to prolong the time during which applications can be made to the 20th November. Up to that time application can be made to the undermentioned: Mr. Flinzer, Inspector of Drawing, King William Street, 8; Mr. Göpfert, Dufour Street, 5, teacher; Dr. Götze, Headmaster of the Real School, King William Street, 19; Mr. R. Schmidt, King William Street, 8, III.

Managers and Conductors of the Courses.—School Director Dr. Barth, Drawing Inspector Flinzer, Teacher Göpfert, Real-School Headmaster Dr. Götze, School Director R. Schmidt, Teacher Haupt, Teacher Heynig, Drawing-Teacher Illing, Teacher Krüges, Drawing-Teacher Muhlbach, Teacher Niederley, Teacher Richter, Teacher Schimpf, Teacher Sonntag, Kantor Zehrfeld.

Time-table for the Teachers' Courses.—Pasteboard-work, Wednesdays from 5 to 7 o'clock; Mr Niederley, teacher. Joinery, Saturdays from 3 to 5 o'clock, and Mondays from 5 to 7; Mr. Werner, master-joiner. Wood-carving, Wednesdays from 2 to 4 o'clock; Mr. Weber, sculptor. Metal work, Saturdays from 3 to 7 o'clock, and Wednesdays from 5 to 7 o'clock; Mr. Kaiser, locksmith. Modelling, Saturdays from 3 to 5 o'clock; Mr. Mühlbach, inspector of drawing (undertaken until the 15th December by Mr. Lehnert, sculptor).

Rules for the Courses for Teachers.—The fee is to be paid in advance, and in the first half-year shall be 5s. for one, 7s. 20pf. for two, and 10s. for three or more courses; in the second half-year the fee shall be one half the amount. The work to be done by each gentleman taking part in the courses is to be decided upon by the conductor of the course. The tools are to be used with the greatest care, and put in order again after use. The work completed is to be entered in a book kept for that purpose in every workshop; it must also remain in the workshop until the next public exhibition; only after this has taken place does it become the property of the person completing it. Every one taking part in the courses is to sign a promise to observe these rules.

Form of Application for Teacher.

THE undersigned herewith applies to join the course for , and binds himself to observe the rules belonging to the courses for teachers. [Full name.]
[School.]
Leipsic, on the 188 . [Place of abode.]

APPENDIX VI.

TIME-TABLE for the SCHOLARS' WORKSHOP, Leipsic. (Winter half-year 1883–84.)

I.—COURSE FOR TEACHERS.

Pasteboard-work.—Wednesdays, from 5 to 7 o'clock; Mr. Niederley, teacher.

Joiners' work.—Saturdays, from 3 to 5 o'clock, Divisions I. and II.; Mondays, from 5 to 7 o'clock, Division III.; Mr. Werner, master carpenter.

Carving in wood.—Wednesdays, from 2 to 4 o'clock; Mr. Weber, sculptor.

Metal-work.—Saturdays, from 5 to 7 o'clock, Division I.; Wednesdays, from 5 to 7 o'clock, Division II.; Mr. Kaiser, locksmith.

II.—SCHOLARS' COURSES.

Pasteboard-work.—Division I.A: Wednesdays from 3 to 5 o'clock; Mr. Niederley, teacher. Division I.B: Wednesdays from 2 to 4 o'clock; Messrs. Niederley and Sonntag. (Place of instruction in the VI. Town School.) Division II.: Saturdays from 3 to 5; Mr. Niederley, teacher. Division III.: Saturdays from 5 to 7; Messrs. Niederley and Sountag. Division IV.: Mondays from 5 to 7; Messrs. Niederley and Schimpf. Division V.: Tuesdays from 5 to 7; Messrs. Niederley and Schimpf.

Carpentering or Joinery.—Division I.A: Wednesdays from 3 to 5; Mr. Teacher Heeger. Division I.B: Wednesdays from 3 to 5; Mr. Teacher Göpfert. Division II.A: Wednesdays from 5 to 7; Mr. Teacher Heeger. Division II.B: Wednesdays from 5 to 7; Mr. Teacher Haupt. Division III.A: Saturdays from 5 to 7; Mr. Kantor Lehrfeld. Division III.B: Saturdays from 5 to 7; Mr. Teacher Haupt. Division IV.: Mondays from 5 to 7; Mr. Teacher Heynig. Division V.: Tuesdays from 5 to 7; Mr. Teacher Richter. Division VI.A: Thursdays from 5 to 7; Mr. Teacher Heynig. Division VI.B: Thursdays from 5 to 7; Mr. Teacher Göpfert. Division VII.: Fridays from 5 to 7; Mr. Teacher Kantor Lehrfeld.

Wood-carving.—Wednesdays, from 4 to 6 o'clock; Mr. Weber, sculptor.

Metal-work.—Division I.: Wednesdays from 3 to 5 o'clock; Mr. Krüger, teacher. Division II.: Saturdays from 3 to 5 o'clock; Mr. Illing, teacher of drawing.

Modelling.—Division I.: Wednesdays from 2 to 4 o'clock; Mr. Mühlbach, teacher of drawing. Division II.: Wednesdays from 4 to 6 o'clock; Mr. Mühlbach, teacher of drawing. Division III.: Saturdays from 3 to 5; Mr. Lehnert, sculptor. Division IV.: Saturdays from 5 to 7; Mr. Lehnert, sculptor.

AMALGAMATION.

[The courses for teachers are marked with an (*) asterisk.]

Mondays.—From 5 to 7 o'clock: Pasteboard-work, IV.; Joiners'-work, IV.; *Joiners'-work, III.

Tuesdays.—From 5 to 7 o'clock: Pasteboard-work, V.; Joiners'-work, V.

Wednesdays.—From 2 to 4 o'clock: Pasteboard-work, I.B; *Wood carving; Modelling, I. From 4 to 6 o'clock: Wood carving; Modelling, II. From 3 to 5 o'clock: Pasteboard-work, I.A; Joinery, I.A; Joinery, I.B; Metal-work, I. From 5 to 7 o'clock: *Pasteboard-work; Joinery, II.A; Joinery, II.B; *Metal-work, II.

Thursdays.—From 5 to 7 o'clock: Joinery, VI.A; Joinery, VI.B.

Fridays.—Joinery, VII.

Saturdays.—From 3 to 5 o'clock: Pasteboard-work, II.; *Joinery, I. and II.; Metal-work, II.; Modelling, III. From 5 to 7 o'clock: Pasteboard-work, III.; Joinery, III.A; Joinery, III.B; *Metal-work, I. From 5 to 7 o'clock: Modelling, IV.

APPENDIX VII.

[Reprinted from "The Workman's Friend," 1883, Part 4.]

WHAT COURSE MUST THE EXTENSION OF WORK-INSTRUCTION TAKE IN FUTURE?

A REPORT presented to the GERMAN CENTRAL COMMITTEE for MANUAL SKILL-INSTRUCTION and HOME INDUSTRY, 7th October, 1883, by Dr. W. GÖTZE, Leipsic.

THE following report is intended only to give a brief account of some of my own ideas, the result of my practical experience in the Leipsic Scholars' Workshop. If they are of little value in themselves, they may still help to bring about an interchange of ideas amongst us as to the best way of carrying on our exertions for the spread of work-instruction:—

In the first place, I should like to state distinctly the standpoint which I take in regard to this question—namely, that I look upon the efforts made to forward manual instruction with far less interest in the subject for its own sake than as part of the great reform movement already commenced in our school system. The battle which is being fought against overtasking scholars, against the mischievous practice of granting scholarships, in favour of the pedagogical training of teachers of public schools at the higher academical seminaries, and of exertions to secure a proper care of the body; the ever-increasing desire to provide an opportunity for young people to engage in active games in the open air; the question of gardens for schools, &c.: all these are movements which demonstrate that new creative powers are stirring in the German schools, and that a breath of fresh air is beginning to blow through the school atmosphere. May it be that the manual-skill movement may attain to its highest worth in our social politics in serving as an incentive to home industry! May the advocates of art industries and hand-work see in them the indispensable groundwork for the prosperous development of German industrial life! May the physician and the professor of hygiene earnestly insist upon the necessity of muscular exercise for preserving the health of the body. To me, as one devoted to the schools, it seems an indispensable aid to the object so-advocated by Pestalozzi, Fröbel, and Herbart—namely, the desired habit of observation as being the best weapon in the battle against verbalism, as a means of giving the scholar an opportunity of working out, through his own experiences, knowledge on which he can securely depend, and which is based on a sure foundation—to release him from the obligation *jurare in verba magistri*, and to lead him on to an exact method of investigating physical science for himself. It is certainly not to be ignored that at present the schools are decidedly closed to any comprehension of the necessity of practical employment for the scholars. We have as yet only got thus far: that those who object to employing the boy in practical work during his leisure hours are now but few. If he wishes to give up his free time to this he can do so. The schools cannot very well prevent him, so they let him alone. Here and there it happens that a teacher forbids this employment to his pupils, or indirectly disgusts them with it by turning it into ridicule; so that we are still a long way off from having obtained a general acknowledgment of the importance of work as a means of education. People show themselves better disposed towards the idea, which also we cherish, of refuges for boys, in which the protective and rescuing aspect of the work comes into view. The institution for the employment of boys therefore meets with a more favourable reception, because every one can comprehend the usefulness to the neglected and abandoned street-children. The good that the schools are to get from practical work is at present impossible to get a hearing for. It is as if we were standing before closed doors. The question now is, How are we to proceed in future?

First, I think we ought, in our own interests, to support all other reform movements which are likely to help us to battle successfully against the selfish self-sufficient doctrine that the school has to give instruction and nothing more—that it should bestow so much complete knowledge, the more the better. Whenever the point is carried that what is known as the Alexander system, which, through unfruitful erudition, threatens to smother the work of the teacher, shall give place to a pedagogy established on a sound psychology, the day is won for our cause.

Here therefore such a large question as that of the relation between the Gymnasium and the Real-School of the First Order has an immediate bearing. For it is my firm conviction that one of the essential causes which brings about the overtasking is the competition between the two establishments. The Gymnasium, in order to preserve its privileges, is obliged to pay more and more attention to mathematics and the natural sciences, and to give up the more exact knowledge of classical antiquity. And the Real-School of the First Order, in order to obtain the privilege, is becoming half untrue to its principle (which is to lay the principal stress on mathematics and the natural sciences, whilst it provides for the linguistic culture of its scholars by means of modern languages), and has, therefore, attempted to rival the Gymnasium even in Latin. Thus, neither the Gymnasium pupil nor the scholar of the Real-School has time to tumble about in the playground; and if we strive to prove the undoubted necessity for the scholars of the higher

institutions of the cultivation of the hand and eye, we are always met from both sides with the categorical "There is no time for anything of the sort." This time therefore has to be arranged for, and whatever helps to give the scholars a breathing space from the mass of matter brought before them in the shape of instruction indirectly serves our cause. A high official said a short time ago that he looked upon work-instruction as the best lever that could be made use of to overthrow the huge mass of material employed in the overtasking system. It may be so, but at present there are many who believe in the Hartwich movement for the care of the body as a still better lever. Why should not both unite as besiegers in a common assault? If a fortress is to be taken the besiegers must work together. It is not enough that we do not march separately; we must strike together. We must recognise as allies the school-reform societies, the societies for the care of the body, the societies for holiday-colonies. We must help them all. In our own interest we must take their part, so that at last the discordance between the demands of life and the claims of the school shall no longer be accepted with dumb resignation as a thing unalterable. We must go hand-in-hand. I recommend as a means of advance the keeping up of pressing efforts for school reform. What unites us is the common endeavour to find space for invaluable elements—elements which cannot be brought into play on account of the overwhelming quantity of instruction material. If the road is once partially cleared we shall easily come to an understanding with our fellow-soldiers over the glorious prize. Our final purpose is the same: the creation of a race which shall be strong in body, strong in mind, and strong in will.

So long as the schools remain closed to us we must cherish work-instruction out of doors with all possible zeal. In the scholars' workshops we shall be able to collect experiences bearing on the future method of work-instruction; the teachers who are in favour of the introduction of work-instruction will there meet together. There the first interchange of ideas upon the technical and pedagogical sides of the manual-skill instruction will take place between the master workman and the teacher versed in school practice—an interchange fraught with benefit to both, and there will be accomplished in the most simple and natural manner the preparatory training of capable teachers for hand-skill instruction. If the free workshop, which is in close proximity to the school, is the true nursery for the future manual-skill instruction, it is easy to judge how important is the care of it. We must strive with all our might to make the scholars' workshop a national institution. Here will the boys feel the magic charm of work for its own sake, which is felt by everyone who gives himself up to it in earnest. Our young people, satiated with mental food, will find at the workman's bench a gay fresh humour steal over them, and their parents will see with astonishment the old-mannish *blasé* scholar, who used to slink along dull and *ennuyé*, metamorphosed into a gay lad, looking with healthy interest at the world surrounding him. It must be self-evident that theoretical school-instruction needs to be supplemented by practical employment in the scholars' workshop, so that actual experience may be added to book-knowledge. The time will then come when it will be with the workshop-instruction as it was formerly with the gymnastic system. The school has neglected the training of the body; the gymnastic system made extraneous provision for it, and at length became without opposition an organic member of the school-instruction. I believe, therefore, that every effort bestowed upon the scholars' workshop indirectly serves to bring nearer the final aim of the manual-skill movement. The next object will naturally be to endeavour to bring to the scholars' workshop a strong force of suitable scholars. Even we in Leipsic kept in sight from the commencement the object of attracting a large number of scholars. The means of accomplishing this object were the usual ones: public announcements, speeches reported in the local press, and exhibitions. If the result, having regard to the obstacles we had to contend with, may be called successful, and if our scholars' workshop has been visited since its foundation by hundreds of scholars, still our wishes are unsatisfied, and we have considered carefully what is to be done to obtain a larger sphere for our undertaking. We found that we should have succeeded better but for the mistake we made in addressing ourselves to the parents, instead of to the boys, who were the parties directly interested. The newspaper articles were read by the parents and laid aside, the reports listened to, and forgotten. We came to the conclusion to address ourselves directly to the young men whose interest is so easily aroused in practical work. Mr. Flinzer, Inspector of Drawing, a member of our Committee of Management, made a sketch of the bright life of the scholars' workshop. I wrote the description for it. This was the beginning of the invitation, of which we struck off 7,000 copies, and distributed amongst the schools. It ran as follows:—[*Vide* Appendix IV.]

This appeal obtained for us great results. I soon had in my own hand 550 applications to join the scholars' course; so that the four divisions which worked through the summer half-year became at one stroke twenty-five, and the number of leaders of the different courses was raised to sixteen. I think, therefore, that I am not over bold in considering our appeal as a useful means of agitating for manual-skill instruction and in recommending it as such to our fellow-workers. The zinc-plate of Fedor Flinzer's design stands at the service of each union for manual-skill instruction; so, too, the patterns for the colouring are still extant, and even the text with slight alterations might be used by the various committees for their purposes. It appears to me, after our own experience, as if it were a means by which, with very small sacrifices, our cause might be sensibly forwarded.

A third important question which ought to be agitated concerns the training of teachers for the manual-skill instruction. There are three ways of getting this done; each has its advantages and disadvantages. The first plan is to hold courses of about six weeks' duration, as has been done in Emden and Dresden. It is an advantage in this plan that the teacher enters at once fully into the practical work, and becomes thoroughly identified with the manual-skill-instruction movement. I must acknowledge myself one of those who believe that a solid and well-grounded knowledge of the subject, including all the different branches, is not to be acquired in that time. This course may excite in the teachers a very active desire for further instruction, but cannot give a thorough schooling. This requires that the teacher should separate from his family for some considerable time; that he should be put to some expense—to many people an insuperable obstacle—for his residence in a large city; and, besides this, the teacher must not only sacrifice his holidays, but receive from the

authorities over him a further extension of three weeks' leave. This is an impossibility, even if there existed a disposition on the part of the authorities to accede to the concession. So that it may often happen that the aptest talents remain lost to the manual-skill course by the operation of this kind of pecuniary and official difficulties. There are others who adhere to the plan we have followed for some years in Leipsic of having, alongside of the scholars' division, courses for teachers conducted by qualified artisans in each particular branch of trade. Here the teachers pass their holidays. They remain at their post and need no leave of absence, and the sacrifice of time and money is trifling. With us, for instance, the amount of the honorarium for the first half-year is 5s. for one, 7s. 6d. for two, and 10s. for three or more courses; but in the second half-year only the half of this is charged. The few hours' time which the teachers give up to the enlivening collegiate intercourse of the scholars' workshop involve no sacrifice for them; they will rather refresh themselves by bodily work for the mental strain which their profession necessitates. Only those join this teachers' course who love the cause and take an interest in it; therefore they choose those branches which attract them and in which they feel that they shall be able to accomplish something. Those members who are very much in earnest make their arrangements so that they go through all the courses one after another. What has to be compressed into a very short space of time in the six weeks' teachers' course, and which on that account demands a great sacrifice, is here divided into a much longer space of time, so that the sacrifice required is almost unnoticeable. What appears to me to be especially important is the lengthened intercourse between the teacher and the skilled artisan which is thus brought about. Here is gradually brought about an exchange of ideas between the pedagogue, who knows how the school is affected, and the artisan of any special branch who has mastered his work technically—an exchange of ideas most useful in helping us to arrive at the gradual construction of a method for hand-work instruction. If the scholars' courses are by these means extended more and more, so those teachers who are thoroughly trained by an experienced artisan get the opportunity at once of beginning the practice of manual-skill instruction. This has already happened to us in the case of twelve teachers. If these then unite in discussing questions of method, and give in turns experimental lessons carefully prepared and followed by conclusive criticism, a manual-skill seminary will thus be formed in the most natural manner possible, without requiring any considerable endowment from the authorities. The constant change from hand-work to school and the intimate connection between the teachers' and the scholars' courses, which are related to each other like the seminary and the school for practice, appears to me to be of the last importance to the development of manual-skill instruction. And so, too, I believe that for our present stage of development this untrammelled preparation is the most suitable. Of course it is only in great cities that it can be thus worked. For teachers in the country some other way must be found. This will be best attained by the introduction of the manual-skill instruction into the seminaries. In my opinion the seminaries should take up this matter in the best way that seems good to themselves without concerning themselves with the question whether the seminarists will afterwards become teachers of manual skill or not. The young seminarists require for their bodily development, physical exertion to counterbalance the effect of their mental work. If hours of study and work time be ever so liberally apportioned, there will always be a considerable time left to the young lads, particularly during the long winter evenings, which they do not altogether spend over their books. As I am informed, in some cases these hours are not always employed exactly as they are intended to be. Here my opinion is that bodily work will prove a real blessing, and on this ground I maintain that the introduction of practical employment in the seminary is exceedingly to be desired. Of course this is not yet really in our power; we have yet to wait to see what side is taken by those in authority. I should wish, as we are upon this subject, to draw attention to two very important considerations. The first concerns the choice of the artisan who is chosen to impart this instruction, as everything depends upon his being rightly chosen. Let the very best and first of artisans be selected. He who is not able to distinguish the pedagogical bearing of his practice, who is not able to give an intelligent account of his technical ability and to teach it to others—who regards every hour, though the scholars, willingly enough, spend it in negligence and trifling, simply as a source of fees to himself—if such a man as this is chosen, then the whole thing will be a failure. It must be kept in mind that a relation of authority between the artisan and the seminarist must take the place of the free intercourse which is gradually developed in the school-workshop between the master and the finished teacher. It is therefore evident that in choosing an artisan all these things must be taken into consideration. On this account I venture to recommend that the experimental introduction of manual-skill instruction should only be attempted in seminaries which are placed in large cities, because there is a greater probability there of finding, amongst the larger number of artisans from which a choice could be made, a suitable man; and I should particularly recommend that a preference should be given to that master workman who had already successfully trained skilful pupils. Another important point is the question of compulsory introduction. I declare myself emphatically opposed to this plan, because everything might be spoiled by it. If all those scholars who have a dislike to practical work and are awkward at it were to be compelled to share in the instruction, the teacher who was conducting the course would have his task—no light one already—made far more difficult, and this to serve no useful purpose; for if this course were persevered in there would soon be an end to the eager efforts of the scholars in the workshop to get on. I think that what makes the courses for teachers in the free workshop so valuable is that only those who take pleasure in the work, and are willing to make sacrifices for the cause, are brought together there. This is an advantage which should not be given up for a compulsory introduction into the seminary.

I come at last to the fourth and last point. I wish to draw attention to this as a means of advancing our cause. This is the necessity that exists for a remedy for the want, so much felt, of proper patterns and models for the work-instruction. So early as last year, the German Central Committee intrusted to a commission the task of providing such copies and models. Professor zur Straszen was charged with the business of conducting this commission. With him were associated the Directors of the Industrial Art Museums in Berlin and Dresden, Grunow, and Cabinet

Councillor Graff, as well as M. von Schenkendorf, of Görlitz, and myself. On the 1st October, last year, a sitting of this commission took place; at this the plan of the undertaking was settled. Accordingly, a competent publisher promised to see that the work appeared in a good form, and to introduce it to the booksellers. There was a slight difference of opinion in the commission as to whether the work should be limited to a distinctly small number of plates of patterns for pasteboard-work, joiners'-, wood-, and metal-works, or whether a repertorium should not rather be formed, in which, one after another, the practical efforts of the different schools of work should be represented; such as the modelling of Görlitz and Leipsic, the wood-carving of Bücking, in Bremen, the slöjd works of Salomons, in Nääs, the geographical reliefs of Von Beust, in Zurich, &c. After this last expression of opinion, which I supported in committee, it was proposed to establish a new organ for the advancement of the manual-skill instruction, such as already exists in the north-west, and for the discussion of the different theories. It seemed to me that there was no need for two plans, but that they might very well be combined. It would be desirable first to forward the editing of the before-named smaller collection of patterns. When this is done and the work has obtained a firm footing, then the want of a larger work will soon make itself felt. Unfortunately I have to report that, through the enormous amount of work cast upon our President, we have not been able, in spite of the most urgent efforts, to take the initiatory steps towards this object. Notwithstanding this, it is my deep conviction that the matter ought not to be allowed to drop, and that the whole thing must be thoroughly gone into if we are to make any progress with our cause. I therefore think it my duty, in this assembly, which has met to consult upon the means of advancing manual-skill instruction, to call upon all work-schools to work out this problem as the most pressing need they have.

New Literature concerning Manual-skill, Home Industry, House Industries, Employments for Children.—Schulzen, Dist. Sec. Osier basket-work teaching. Institutions for basket-work instruction. With (5 lithographs) plates and woodcuts.—Sixth Report of the House Industry Union at Dorpat. Dorpat, 1883. Laakmann's Book Depôt. Palmgreen K. C., Rector. "Mamma, hvad skall jag göra?" (Mamma, what shall I work at?) Patterns for Handworks in the House and in the School. Stockholm, 1883. 3kr. 75 öre.—"Tidning f. Arbetsskolar och Hemslöjd" (Journal for Work Schools and House Industry). Second Yearly Volume. Stockholm, 1883. Yearly, 4kr.

APPENDIX VIII.

Course of Instruction for Teachers for Improvement in Manual-skill Instruction.

The undersigned Board of the Scholars-Workshops in Leipsic have determined to institute a course for the improvement of teachers in manual skill, and invite all school officials who interest themselves in the social and pedagogical side of a movement so important as the training to work, to take part in it.

Our present course differs from those which have been held in earlier times in Germany, as it avoids an encyclopædic variety of branches of instruction. It does this, hoping to secure a more thorough grounding in a few. The gentlemen taking part in the course will have an opportunity given them of observing the practice of the workshop-instruction, by seeing the scholars taught, the scholars' lessons in work being continued during the holidays under experienced teachers; and finally in order to diminish the great expense of a protracted stay, and to do away with the difficulty of obtaining leave of absence, the duration of this course is limited to four weeks. In reference to this last point, we hope sincerely to be able to resume our enterprise next year, so that the gentlemen taking part in the course this year may have the opportunity next year of acquiring a knowledge of some other branch.

We submit the following rules as suitable for our undertaking: (1.) The course of instruction will commence on the 21st July, and close on the 16th August. (2.) In the event of the attendance being sufficiently numerous, instruction will be given in pasteboard-work, joinery, wood carving, metal-work, and modelling. The five divisions are under the able guidance—an ability proved by years of trial—of the heads of our teachers' courses, namely, Mr. Niederley, teacher; Mr. Werner, master joiner; Mr. Weber, sculptor; Mr. Kayser, locksmith; and Mr. Lehnert, sculptor. The direction is intrusted to Mr. Göpfert, teacher, who acts in the name of the Board. (3.) The time employed in work is eight hours daily, four hours in the morning and four in the afternoon. (4.) The gentlemen taking part in the course are allowed to take instruction in two branches at the most. (5.) The fee, which must be paid in advance, amounts to £2. (6.) The work completed by the gentlemen will become their own property on payment of 5s. for material.

In conclusion, we should like to make it known that the teachers' course is not only open to German teachers; we would welcome with pleasure teachers from other countries—from Austria, for example.

We shall endeavour not only to give a practical hold of the branches they may select to the gentlemen joining our course, but also to impart to them the method of work-instruction—a method we have been working at these four years. We have had many consultations on this point with the gentlemen conducting the courses, and much comparing of our mutual experiences in order to arrange this course of instruction in each department.

We shall besides endeavour to help the gentlemen who come to join us in finding a cheap and good boarding place in our city. Besides having in view a number of lodginghouses, we rely on support from the teachers of Leipsic; an appeal to their feeling of fellowship is never made in vain. We shall rely especially on the members of our teachers' course.

We venture confidently to hope that the Royal Ministry of Worship and Public Instruction will, if applied to, contribute towards the expenses of those Saxon teachers who wish to join our course, as on a former occasion.

Finally, we beg to draw attention to the fact that the available space in our workshops will only admit of our receiving a certain number of applicants; their reception will therefore depend upon their priority of application. Once more, we most cordially invite all schoolmen interested in our work-instruction to take part in our course.

Committee of Management of the Scholars' Workshop, Leipsic.—Dr. W. Götze, headmaster of the Real Gymnasium, president; Town Councillor Scharf, treasurer; Mr. Göpfert, teacher, secretary; Dr. G. Barth, representative of the institute; Dr. Karl Biedermann, honorary professor of the University of Leipsic; Fedor Flinzer, town drawing inspector and headteacher, Real Gymnasium; R. Schmidt, director of the Town School; M. zur Straszen, professor of the Academy of Art and inspector of the Industrial Art Museum.

Form of Application.

THE undersigned herewith applies for permission to take part in the course for ,* and pledges himself to observe the regulations of the teachers' course of the Leipsic Scholars' Workshop.

[Full name.]
[Standing.]
[Place.]
On the 188 . [Place of abode.]

APPENDIX IX.

THE LEIPSIC COURSE OF INSTRUCTION FOR TEACHERS OF MANUAL-SKILL INSTRUCTION.

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THE course of instruction for foreign teachers, which was instituted by the Committee of Management of the Leipsic Scholars' Workshop, at the instigation of the President, Dr. Götze, during the summer holidays of the present year, began on the 21st July. On the evening before, those teachers who had already signified their intention of joining the course, met at a social gathering at the Teachers' Association Home. The course was opened at 9 o'clock in the morning, in the old Thomas School. Dr. Charles Biedermann opened the proceedings by bidding those come to share in the instruction a hearty welcome in the name of the Management of the Scholars' Workshop. He stated shortly and clearly the present position of the manual-skill movement. If it is strictly true that the notion of training young people to work originated in Germany, it ought still to be acknowledged that the impetus given to the present movement, the attempt to render manual-skill instruction practicable, has come to us from abroad. In reference to this we ought especially to acknowledge the services of the Danish Captain, Von Clauson-Kaas, as well as the two Swedish gentlemen, Abramson and Salomon. The courses of instruction which, up to the present time, have been established in Germany for teachers have not been entirely German, as their organization and management have been placed in foreign hands. The present course is the first which has been established in connection with an already existing scholars' workshop, and without foreign assistance. The number of participators attracted to this course from without is most gratifying. Out of the thirty participators, five were from Siebenbürgen, four from Bohemia, one from Moravia, one from Wurtemburg, one from Alsace, nine from the Kingdom of Prussia, five from Thuringia, and four from the Kingdom of Saxony. Professor Biedermann spoke of the position taken by the friends of manual-skill instruction with regard to the joining of this branch of instruction to the existing public schools, and said this could only be accomplished by first carefully training teachers for the purpose; then by working out a practicable method for the instruction; and lastly, by using the experience gained in the free scholars' workshops. All this must be gradually gone through before there could be any question of uniting practical work-instruction with school-instruction. In Leipsic they think themselves obliged, on the ground of the experience already gained there, to lay down the rule that the instruction is only to be given by teachers according to pedagogical principles. It is a matter of the last importance that the teachers should feel a deep interest in, and have a true sympathy with, the cause. The hearty interest taken in those teachers' courses which have already been established in Germany is a hopeful sign. The sacrifices made by the sharers in the course is no light one when one reflects that it is the time intended for refreshing and invigorating themselves, after the long strain necessitated by their calling, which they give up to this practical work. They do this that they may help to settle the weighty pedagogical question. Even in the conclusions come to in the Kasseler teachers' journal, which objects to the idea of uniting the work-school with the teaching-school, it is allowed that in the present system of education it would be desirable to have more regard to the bodily-development of young people at school than at present. This is precisely the object kept in view by the scholars' workshop, to be a counterbalancing influence to the one-sided mental employment so exclusively practised by our schools. Professor Biedermann concluded his words of welcome by expressing the hope that the present course might help in advancing the efforts made to introduce a training for work. His speech was received with great applause.

Here followed business communications with Mr. Göpfert, teacher, who was intrusted with the conduct of the course. This particular course comprised joiners' work, wood-carving, modelling, and pasteboard-work. A course in metal-work fell through for want of support. The participators are only allowed at most to study two branches, the choice being left to themselves. The instruction honorarium amounts to £2. The course for joinery and wood-carving numbered sixteen participators; these were divided into two classes for instruction. For the pasteboard course there were 14; for modelling, 11. With the exception of two, all of these selected two different subjects. The

* The one or two branches of instruction chosen by applicant are to be designated here. When the application is filled in, it is to be sent to Professor Dr. Biedermann, Leipsic, Sidonian Strasse, 39–40. Inquiries about board and residence to be addressed to Kantor Zehrfeld, Mühlgasse, chairman of the committee for arranging residences.

instruction was under the guidance of Messrs. Werner, foreman (joinery), Weber, sculptor (wood-carving), Lehnert and Weinert, sculptors (modelling), and Niederley, teacher (pasteboard). Every day eight hours were spent in practical work. Twice a week there was a class for boys. By this means the participators were able to see the school method of imparting manual-skill instruction. Much benefit should accrue to the discussions on the best method of imparting this instruction from these opportunities for experience.

The instruction in joiners' work was followed out in this manner: After a preparatory exercise in the use of the saw and plane, learning to saw pieces of a required size, and smooth-planing smaller flat surfaces, the following articles were completed: four-sided, eight-sided, and round stems or sticks; joining corners as a preparatory work to clasping them together with pegs; plain, covered, and diagonal boxes, destined later to be polished; simple frames, knife-boxes, footstools —the last two objects designed to have reference to the making of curves; fluted frames and drawing-boards. In the making of these articles the most ordinary and simplest manipulation known in joinery was taught in gradual succession.

The carving in wood was taught by preparatory exercises in constructing geometrical figures, and in the deep-cutting of three-cornered and six-cornered forms carried out in various ways. The skill thus gained in indented cutting was turned to account in producing objects which were first drawn on the wood; then followed the cutting of the contour by means of the fret-saw, the filing-out of the same, the cutting out of the parts to be cut by means of the deep-cut, and the priming of the deeper flat pieces. Besides two boards with preparatory exercises, the following objects were finished in correspondence with the progressive degrees of the course of instruction already described: two frames, two holders for keys, one thermometer-board, one console, one case for wall-calendar, and one large frame for a figure-group.

The course for modelling extended to cutting plaster, casting plaster, and special modelling in plastilina and clay. In cut plaster were represented the prism, prism with pyramid, prism with recessed pyramid, cylinder, cylinder with pyramid, the same with recessed pyramid, four-, six-, and eight-sided pillars, obelisk, cube, polygon; the joining together of cube, obelisk, and pyramid. Casting in plaster was practised on round frames and turning the corners of the frames. This was followed by castings from natural leaves, and the placing of such castings on the surface, stamping them, and taking copies of them. The mere modelling was expanded to the forming of simple leaves in plastilina from a plaster model, and the finishing-off of a plaster cast of them. In clay there were modelled a five-pointed star, one such with contrary points, one rosette of five parts, one with fruit and flower-stand joined to an arabesque, one natural leaf of five parts. Of the last the plaster-mould and a casting from it were also shown.

The course followed in pasteboard was as follows: boxes for minerals of different sizes (in the making of these the covering of the pasteboard with white paper was practised, the cutting and scoring of the pasteboard, the holding of the sharp knife, the preparation of sized paper, and the utilizing it for holding the corners of the different kinds of coverings of the pasteboard surfaces), the so-called magic pockets (study in putting a brim to the edges, and including the corners in the covering), boxes with covers which project over the sides, boxes with sliding-tops, large portfolios without pockets, letter-cases, lucifer match-boxes for the wall, dinner napkin-rings, double balls for rolling upwards, boxes with six sides, boxes in sets within each other, boxes with compartments, camera obscura, bound manuscript book, with lead pencil-case, mounting on linen a folding map, with case for same.

When works were completed by the members of the course, and placed in a separate chamber for exhibition, any participator was allowed to make inquiries respecting the course of instruction followed in any of the branches which he was not studying.

There were six "sample lessons" given to boys. Unfortunately it was not possible to assemble a full scholars' class during the holidays, so that the lessons that were given could only be given to a small number of scholars. But even so, the participators were enabled to watch the practical carrying-out of the work-instruction. In three lessons Mr. Niederley explained the easier part of pasteboard-work. In the first a comic object—a baboon—was made of strong cardboard; in the second a flute. In the third lesson Mr. Niederley illustrated the use of the scissors by cutting out decorations in various coloured paper, and the shapes of animals. Mr. Niederley's lesson hour was specially useful in showing how the objects of work-instruction could be advanced by such very simple means. He then pointed out how much could be done for the play-life of children by the aid of work-instruction.

Mr. Schimpf (teacher) showed them in his lesson how to finish a portfolio with bands. Mr. Zehrfeld presided over the joinery lesson. In this lesson the pupils finished a little box with a cover. Mr. Weber (sculptor) made his pupils sketch a design for a watchstand; the outlines were cut with the fret-saw; then it was finished by carving and indented work. The experiments in modelling had to be given up on account of the sudden indisposition of Mr. Lehnert (sculptor).

Besides the practical work, papers were read and discussions took place on manual-skill instruction twice a week. The first paper was read by Professor Dr. Biedermann. He spoke of the historical development of the question of "Training to Work," starting with the specially pedagogical view of the subject taken by Luther. He gave an excellent statement of the character of the movement from the point of view of the most prominent of the pedagogues from Luther to Fröbel and Herbart. The speaker described most exhaustively the present movement, its promoters, and their views, together with the manner in which they were being carried out. Five pretty sharply-defined aims are recognised by us as bearing upon the movement for promoting manual-skill instruction. (1.) It is wished to make children able to earn something; to this end a small remuneration is given to them for their work. In this way the movement begins its operations in the so-called poor districts. (2.) The economical side of the question is made a subordinate one. Our principal efforts are directed to securing for the rising generation a general skilfulness of hand adapted to industrial purposes. Professor Eitelberg, in Vienna, believes that by these means

the question concerning apprentices, and the question of raising the standard of industrial arts, may be greatly helped to a solution. (3.) Manual-skill instruction ought to be supported on account of its pedagogical value. Not only the hand, but the mind too will be developed by practical skilfulness; self-reliance will be engendered, the habit of observation exercised, the will rendered firm. (4.) The work-instruction will be employed in the service of the school, where its task will be only to furnish means of intuition and teaching; for example, in making geometrical bodies, physical apparatus, &c. (5.) The most important effect of a training to work is its direct immediate effect morally. In the more recently-established refuges for boys a prominent place is assigned to the manual-skill instruction on this account.

The speech was received with great applause by the partakers of the course. From the following discussions it is easy to recognise the different standpoints taken, according to the local circumstances of the various neighbourhoods, as to the conception of the movement and the aims of the manual-skill instruction.

Mr. Professor Dr. Biedermann deserves the highest praise for his untiring assistance in the meetings and discussions. The progress which the course has made, owing to the efforts of the faithful champions of the movement who have promoted the idea of training to work with so much energy and acuteness—a thing so necessary to the true needs of the people's education—ought to be remembered with gratitude by all those who attend it. The parting words of Director Manzer, of Tetschen, to Professor Dr. Biedermann upon his leaving the participators—that it was a pride and an honour for every adherent of the cause to be associated in his efforts with such men—will certainly find an echo in every heart.

The second motion proposed by Mr. Heeges (teacher), from Leipsic, was upon the Swedish system of work-instruction. Mr. Heeges had taken part in a six weeks' course in the seminary at Naas, and had taken this opportunity of visiting a large number of Swedish work-schools; thus he was in a position to speak from his own experience. After explaining the development of the Swedish house industries, the speaker gave a description of the instruction as given at Naas, as far as it concerned works in wood. The instruction was given in connection with a large collection of excellent models; these exclusively represented objects of domestic utility; these objects were, in the opinion of Mr. Heeges, well calculated to develop a general skilfulness of hand, to educate eye and hand to observation, perseverance, order, and accuracy. The instruction stands in no relation to the schools, but is rather directed to promote home industry. On this account the German work-instruction will be able to make little use of the Swedish system. Mr. Heeges explained, in conclusion, the models he had himself made after having followed the course of instruction for six weeks. By these completed works, and by the lively description he gave of the impressions made by his journey and his observations on the land and the people of Sweden, he gained great applause.

In the sitting of the 7th August, Mr. Lehmann (teacher), from Zwickau, gave an exhaustive report on the Zwickau scholars' workshop. This institution, under the approved guidance of Mr. Hertel, teacher of drawing, had already attained results worthy of notice. The works completed and reported upon by the person appointed prove the systematic and careful way in which the instruction is given in Zwickau. At the beginning of the undertaking there it was entirely a private concern of Mr. Hertel's; most fortunately, the municipal authorities took it up, and lately an independent society has been formed with the object of supporting the scholars' workshops.

In connection with Mr. Lehmann's report, Mr. Göpfert gave a short account of the gradual progress of the Leipsic scholars' workshops. This was done in compliance with a very generally expressed wish. These workshops are the creation of the present Utilitarian Society. The first thing which aroused an interest in the efforts to promote manual-skill instruction was a paper by Mr. A. Lammers, on "Hand Employments and Home Industry," read in the meeting of the 18th November, 1879. As a result of this paper a commission of eight members was appointed and intrusted with the task of discussing the practical carrying out of the idea then agitated. The commission executed their task by instructive discussion during the months of November and December, 1879, as well as in January, 1880, and presented their report to the society through their president, Dr. Götze, headmaster, on the 27th January. The proposals of the committee, which met with the cordial approval of the society, placed the educational side of work-instruction in the foreground. Its connection with the public schools was looked upon as a matter for later effort. They thought it ought first to be considered as a counterpoise to the almost exclusive theoretical instruction at present given, and to supplement it. This view of practical work is strongly urged in its relation to schools. In order to spread the interest in this important question farther and in a wider circle, Dr. Götze drew up a memorial which appeared first in the "Workman's Friend," and afterwards as a separate pamphlet, under the title of "The Supplementing of School Instruction by Practical Employment" (Leipsic, 1880, at H. Matthes'). In accordance with a resolution passed by the Utilitarian Society, the establishment of a Leipsic scholars' workshop was proceeded with. The untiring efforts, the energy and enthusiasm shown by Dr. Götze have gradually developed this workshop from its unassuming beginning to its present stage. The first thing attempted was an instruction-course for teachers in the summer of 1880, starting with the condition that the providing of proper teaching power should always be the first consideration. The first course was arranged for scholars so early as Michaelmas, 1880. The number of scholars attending at first was ninety, and the number has steadily increased ever since. The attendance was most regular in winter, more so than in summer. The subjects chosen for instruction were joiner's work, pasteboard, wood carving, modelling, and metal-work. The choice of subject is left to each scholar, only that a rule was made that the younger scholars should begin with pasteboard-work, the elder with wood-work. An especial impetus has been given to the work of the scholars' workshop since Michaelmas, 1883, by an appeal distributed through the schools and addressed to Leipsic scholars by Dr. Götze, adorned with an illustration by Mr. Flinzer, Inspector of Drawing. In consequence of this appeal the number of scholars attending rose to 585. These were instructed in twenty-four divisions by thirteen teachers—eleven divisions of joinery, six of

pasteboard-work, four of modelling, one of wood carving, and two of metal-work. In the summer half-year of 1884 there were eighteen courses, with 287 scholars, in spite of the heat of summer, representing such a continuance of pupils working as had not been reached before. Of the various branches of instruction, joinery and pasteboard-work were the unvarying favourites. The honorarium for each course amounted to 1s. a month. In each course there were two hours of instruction every week, and these followed directly one upon another. Besides the scholars' courses, there were regular courses held in the different branches for teachers of this country. This last-named course has always been most numerously attended. During the last winter the number of teachers attending the course was thirty-five, in the present summer half-year twenty-eight. At the close of the courses the work completed by the scholars is usually exhibited to the public. By doing this a number of friends have been gained for the cause. The cost of establishing the Leipsic scholars' workshops was borne by the Utilitarian Society, and up to the present time has amounted to £75. A large number of the members of the society subscribed specially to the Leipsic workshop in addition to their usual contributions. The municipal authorities gave a yearly subscription of £15, besides allowing a free use of the old Thomas School. The Imperial Ministry of Education bestowed a grant of £25. This generous support has been sufficient to provide for the inevitable expenses of beginning such an undertaking, and has set the scholars' workshops fairly going. If the establishing of such an institution is once provided for, every scholars' workshop ought afterwards to endeavour to support itself by the contributions of its scholars.

In connection with these two reports the question was discussed as to what was the best manner of promoting the establishing of scholars' workshops. It was generally acknowledged that it was far better to begin on a small scale. Thus it was best at starting to attempt only one branch of the instruction. It was agreed on all hands that pasteboard-work was the most suitable. This was how the Zwickau scholars' workshop began its operations, and the experiences gained there proved the justice of the view.

At the sitting of the course, the week before last, reference was made to the more prominent publications on the subject of manual-skill instruction. Director Schorter (Colmar), and Mr. Hartmann, teacher (Ohrdrug), discussed the writings of Professor Dr. Biedermann, "Training to Work: a Demand of Life upon the Schools;" Dr. Götze, "The supplementing of School Instruction by Practical Employment;" and C. von Schenkendorff, "Practical Instruction." Mr. Göpfert, conductor of courses, stated his opinions of the theoretical side of the manual-skill instruction. These discussions extended over several evenings in the following order: I. Instruction in practical work is necessary to a natural and comprehensive education, more especially with reference to practical life. II. The value of practical exercises is that they—(1) arouse a child's tendency to activity, regulate it, and give it a suitable direction; (2) exercise and develop bodily power; (3) intensify mental impressions, while they intensify the powers of intuitive perception, and, by means of the varied experiments which the scholars are by their own desires impelled to make, impart inestimable practical knowledge; (4) further the development of the sense of form and beauty; (5) by long-continued devotion to a distinct and clearly-understood object, aid in the formation of the will; and (6) act as a preparation for practical life by imparting a general skilfulness of hand as well as important practical acquirements. III. The employments brought forward as suitable for manual-skill instruction must—(1) be capable of being reduced to a proper methodical system; (2) lend themselves to the development of a general skilfulness of hand; (3) be directed to the making of objects which are equally applicable to house and school; (4) promote order and accuracy, cleanliness and neatness; (5) help in the development of the sense of form and beauty; (6) develop, as much as is possible, the manifold powers of the body; (7) be a counterpoise to the exclusive head work; and (8) be so ordered as not to be hurtful to the health. IV. These demands are being met in a marked degree by the work in the school-garden, paper- and pasteboard-work, easy joiners'-work, simple metal-work, wood carving, and modelling. V. In order to attain perfectly the object of manual-skill instruction, it must be carried on as a substantial part of school instruction, and entirely on pedagogical principles.

In the last conference, on the 14th August, Mr. Karnagel (Halle) based on the lessons already given to the scholars the demands which had to be met by an instruction carried on methodically. He stated his views in the following few sentences, which found sympathy throughout the whole meeting: (1) Before the commencement of practical work an address ought to be given, by those who give the manual-skill instruction, on the material, on the general construction of the object, and on the utility of the object when completed; (2) the works ought in themselves to form a gradual progress from what is easy to what is difficult; (3) whilst engaged in the work, every opportunity is to be taken of showing its relation to school instruction; (4) the tasks set by the work-instructors ought to be, as far as possible, carried out in the same manner by all the scholars; (5) it is necessary to make the strictest laws as to what is ordered to be executed in the workshop, and how the work is to be followed out.

It was not possible to hold a farewell meeting at the real termination of the course, the greater number of those who had taken part in it being compelled to use the last day of the course for their homeward journey. The last conference meeting, therefore, was made the occasion of officially closing the course, although the practical work was continued until the Saturday midday. After the few sentences alluded to above had been spoken, the conductor of the course seized the opportunity of reviewing briefly the past course. To this he added the hope that all those who had worked with him might be able to set going, in their own particular home circle, well-considered operations, which would advance the interests of the movement. Upon this, Director Schorter, from Kolmar, in the name of those who had been members of the course just finished, expressed their heartfelt thanks to the manager of the Leipsic school workshops for instituting the course, as well as to Mr. Göpfert for conducting it; to Cantor Zehrfeld for relieving them from the question of where they should board and live; but, even beyond all this, their thanks were given for the in-

valuable assistance given to them by those appointed to lead the courses. These feelings found their outward expression in a hearty hurrah! [hoch!] After the last serious word had been spoken and its sound had died away, gaiety and goodfellowship reigned supreme. The sharers in the course spent a few hours in pleasant sociability with a number of Leipsic teachers, and gay speeches and gayer songs were heard on all sides.

In conclusion, as a consequence of the course being so numerously attended as it had been during its whole length more marked attention appears to have been paid to the subject of manual-skill instruction, especially by the school authorities. In referring to this, it ought to be mentioned that Mr. Upper-School Counsellor Greim, from Darmstadt, commissioned by the Grand Ducal Ministry, the Royal Trade-School Inspector Enke from Dresden, Dr. Gelbe, Director of the Holberg Real-School, and Rectors Chun and Schnabel, from Frankfort-on-Main, had, during an attendance of many days, made observations of the management of the workshop, and of the conduct of the instruction.

It must not remain unnoticed that those attending the courses had a library of more than forty volumes placed at their disposal. This comprised a tolerably complete collection of the literature concerning manual-skill instruction. The management of this had been willingly undertaken by Mr. Graupner (head-master), Adorf.

In order to give the teachers a little mental recreation after the heavy work of the day, one of the members of the managing committee, Town Counsellor Scharf, exerted himself in the most praiseworthy manner to procure tickets of admission to the city theatre at lowered rates. The managers of the theatre met the request in a very friendly spirit, so that every one of those attending the courses were allowed to enjoy the pleasure of going to the theatre at half the usual price. Great use was made of this privilege. Mr. Kayser (Auc) and Professor Schuller (Hermannstadt) deserve thanks for their presents to the library. The capital representation in relief of Hungary and Siebenburgen, by Professor Schuller, is not only a valuable addition to the collection of models belonging to the Leipsic scholars' workshops, but is a proof of the lively interest taken in their efforts by their far-away countrymen; this gives it an additional interest. Here we must mention that Rector Litschel, from Bistritz, during his stay in Leipsic made a speech, which was received with the greatest enthusiasm, on the subject of Siebenburg's German schools and their teachers; this was delivered before a large assembly in the hall of the Teachers' Union. This eloquent speech was a living proof of the power and tenacity with which the German people clung together in the far east of Siebenbürg, Saxony. Apart from the fact of one of the sharers in the course having fallen ill at the beginning of the course and being obliged by medical advice to give up any further attempt to attend the work, and the serious illness of Mr. Lehnert, for whom Mr. Wienert had to undertake the instruction in modelling, the course was successfully carried out to the end according to the original plan without any disturbing occurrence. If one glances over the results as represented by the articles finished during the courses and exhibited, the object in view may be looked upon as attained.

The Leipsic scholars' workshops held this course for non-resident or foreign teachers, entirely in consequence of often-expressed and numerous wishes from without, as the teachers living here have an opportunity the whole year through of appropriating a few hours in the week to the study of manual-skill instruction and its needful technical training, under able practical guidance; the object aimed at was to enable the sharers in the holiday course to attain the same end by an uninterrupted four weeks of continual practice. By the rule that each sharer should only be allowed to take part in two branches, the duration of the course could be definitely limited to four weeks. This curtailing of the course to four weeks, when it had up to now taken six, was not a mere expedient to render possible the holding of a course at all, for the limiting of each sharer to two branches, allowed more time to be devoted to each branch than was possible at the courses in Emden and Dresden, in spite of their six weeks' duration. Such a limitation was the more easily compassed, as the intention from the very first had been to hold a holiday course in the Leipsic scholars' workshops during the next year, so that those who have attended the course this year will later on have the opportunity of working at the other branches. The reproach that has gone forth that in Leipsic the superficial study of the various branches, which is so usual, is there even aggravated by the curtailing of the length of the course, is not justified. The four branches selected to be studied are not for each sharer, but for the course as a whole; it has been found that each sharer has worked with far greater ardour at his own branch than he would if he had gone through the regulation teachers' course for half a year. The experience gained at this time gives us fresh courage to continue in the way we have marked out for ourselves. Already many of the sharers have given notice of their intention, if circumstances should allow of it, to come again next year. The Leipsic scholars' workshop will rejoice to see once more their old friends from north and south, from east and west, set gaily and brightly to work in their allotted places.

EMIL GÖPFERT.

APPENDIX X.

SCHOLARS' WORKSHOP OF THE UTILITARIAN SOCIETY.

DURING the next half-year a course of instruction will be held in the Scholars' Workshop in Leipsic, under the direction of preceptors. It is intended to help boys to satisfy their natural wish to make use of their bodily powers; to educate the hand and eye, and to develop practical skill. The instruction will be given in the commodious workshops of the old Thomas School, at times when the pupils are not in school, and will consist of divisions for paper and pasteboard-work, cabinet-work, wood-carving, light metal-work, and modelling. In each there will be two hours' instruction weekly. The fee, which must be paid in advance, amounts to 1s. a month; if the half-year is paid for in advance only 4s. will be charged. In order to simplify the management of the business, the last-named mode of payment is especially desired.

Those wishing to join to send in their names to Professor Dr. Biedermann, Sidonienstrasse, 39–40; the paper warehouse of Otto Friedlein, near the No. 3 town school; Dr. Götze, Emperor William Street, 19, ii; the paper warehouse of Paul Götze, Peterskinweg, 5 (new no. 10); the cloth warehouse of B. J. Hansen, Market, No. 14; Mr. Preceptor Haupt, Bayrische Street, 111, iii; the paper warehouse of Mating Sammles, Peter Street, 10–11; the bookseller's shop of Henry Matthes, Schiller Street, 5; the Rossberg bookshop, University Street, 19; and School-director Schmidt, Emperor William Street, 8, iii. Also on Wednesdays and Saturday evenings, from 3 to 4 o'clock, in the old Thomas School, first floor; and in the Art Industrial Museum, Thomas Churchyard, 20–1, during the visiting time.

There are half-gratuitous places for needy scholars; the holders of these pay monthly, in advance, a sum of fifty pfennige (5d.) for material. Applications for the free places which the last school censor added, are to be addressed to Mr. School-director Schmidt. Hours of application are on Wednesdays and Saturdays, from 11 to 12 o'clock, in the No. 6 town school.

Rules for the Scholars' Course.—The fee is to be paid punctually at the first instruction lesson every month in advance. The scholars are to render unqualified obedience to the regulations of the conductor of the course. The strictest order is to be kept with respect to the tools. Every single tool is to be put carefully in its place after it has been used. The articles made here will become the property of the scholars, but must remain until after the next public exhibition of the workshop work. If a scholar is absent from the instruction, on his return he must hand in a written excuse signed by his parents to the conductor of the course. A scholar cannot leave without a written notice. This is to be effected by the parents writing to the conductor of the course. The payment for the current month is to be made in full. The parents are to sign a promise to see that these rules are adhered to.

The Management of the Scholars' Workshop at Leipsic: Dr. Götze, President; Town Councillor Schart, Treasurer; Preceptor S. Göpfert, Secretary; Director Dr. Barth; Professor Dr. Biedermann; Drawing-Inspector Flinzer; Preceptor M. Haupt; School-director Schmidt; Professor zur Straszen; Cantoz Zehrfeld.

Form of Application for Scholars.

I HEREBY make application for my son [*full name*], [*age*], [*school*], [*class*], to take part in the workshop-course for , and bind myself to the punctual observance of the rules of the workshop.

(Full name.)
(Calling.)
Leipsic, on , 188 . (Dwelling.)

OBSERVATION.—The distribution of the scholars in the various courses of instruction will be announced on the same Saturday—the 11th April—in the afternoon between 3 and 4 o'clock in the old Thomas School, first floor. In order that due regard may be paid to the scholars having suitable subjects selected for them, they are requested to give up their free time.

APPENDIX XI.

PATTERNS for MANUAL-SKILL INSTRUCTION. Published by E. A. Seemann, Leipsic. Edited, by the desire of the German Central Committee for the Promotion of Manual-skill Instruction and Home Industry, by Mr. von Straszen, Professor at the Academy of Art and Director of the Industrial Art Museum at Leipsic; Dr. Götze, Headmaster of the Real-gymnasium and President of the Scholars' Workshop in Leipsic; and E. von Schenckendorff, Imperial Directions-Councillor, Member of the Prussian Chamber for Deputies for Görlitz.

ONE of those questions which in our stirring times have engaged the public interest in an unusual manner is unquestionably the question of instruction in manual skill. From the most opposite quarters it has been discussed, both for and against it; artisans and teachers, representatives of art, industries, social politicians, and physicians have taken part in the attempted solution of the problem. The daily press, as well as the literature specially devoted to the subject, has gone into it exhaustively. It has been placed, too, in the order for the day of the various unions, congresses, and public meetings. But it is not the depth of interest displayed in the question of a training to work which is alone worthy of notice, but the rapid and wide extension of the movement; for not only in Sweden and Norway, in Denmark, Finland, and the east sea provinces has the movement taken root, but also in the German Empire, the north as well as the south; in Austria and Hungary, in Switzerland, in France, Belgium, and Holland. In all these countries the cause is enthusiastically upheld.

It is very natural that the zealous propaganda for promoting reform in our system of education should be followed by a period of comparative quiet, during which the movement is gradually making its way, and continual efforts are being made for its development; that the answer to the question "whether" shall be the new question "how." If the education based almost entirely on theoretical acquirements, which is now given to our lads, is ever to be joined to a thorough training of hand and eye—if the instruction, which aims at rendering fruitful the power "to know" of our boys, is ever to be made complete by a preliminary course of practical work teaching them "to do"—if, indeed, the will is itself developed by multifarious exercise, then is the question of what is the most fitting form of such practical employment the one of all others to be first considered. The band of men who form the German Central Committee for Manual-skill Instruction and Home Industry had this question in their mind when they appointed a committee from their own body to provide a model of work to serve as an example to those workshops already existing as well as those about to be established; also to homes for destitute boys and schools for instruction in manual skill.

With the collection of patterns for carving, by Mr. C. Grunow, chief director of the Berlin Art-Trade Museum, now lying before us, the commission begins its appointed task, which is intended to include patterns for pasteboard-work, for modelling, for joiners' work, and for easy metal-work.

May the work give vigorous help to the movement for promoting manual-skill instruction, out of which it has arisen; and above all other considerations may it help the rising generation to grow up according to the old saying, which forms the motto of the Leipsic scholars' workshop—

Cultivate the eye and exercise the hand,
Firm will be the will and clear the understanding.

The Commission for Editing the Model Works:
Professor ZUR STRASZEN; Dr. W. GÖTZE, Secretary.

Leipsic, November, 1884.

The publishers beg to notify in relation to the above that the selling price for the part, carving-patterns, twelve plates lightly bound, is 8s.; in quantities for the use of schools a reduction is made in the price—ten copies, £3; fifty copies, £12 10s. If ten copies of the same plate are taken, 6s. will be charged. For the parts which are yet to appear the price has not yet been fixed. It is thought that they may be brought out in a cheaper form, and that the price of each separate sheet may not be higher than 20 pfennige, or at the most 25.—The PUBLISHERS. Printed by August Pries, Leipsic.

[The Appendices (I.–XI.) to Dr. Götze's paper have been translated from the German originals.]

[*Approximate Cost of Paper.*—Preparation, £28; printing (2725 copies) £68 11s. 2d.]

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