

copy work of the simplest nature both in pencil and in ink. Having become a lay copier, the pupil is given a sketch of some detailed piece of machinery, with dimensions, or a wooden model. The different views of the piece represented he is required to "lay down to scale and finish up" according to workshop practice.

ARCHITECTURAL DRAWING.

This class is under the direction of Mr. I. E. Vanier, C.E., and Mr. E. Belanger, and is intended for carpenters, builders and cabinet makers. The instruction consists of exercises in plane geometry and projection, and the pupils are also instructed in the details of framing plans and elevations of buildings and of working drawings. The majority of pupils are engaged as carpenters, cabinet makers and joiners, and as the use of the compass and architectural decoration is of late entering so largely into building and construction, the opportunity for knowledge in this direction is duly appreciated.

MODELLING AND WOOD CARVING.

This class was formed for the instruction of marble and stone cutters, wood carvers, and for all those occupations require a knowledge of the chisel. The necessary tools are provided free, and although the number of pupils in attendance is not large, the work that they have completed bears evidence of their industry and application. Plaster casts are chiefly used as models, the pupils commencing with simple forms and proceeding by degrees to more difficult subjects. The benches and lights are very conveniently arranged, and every facility is provided for the convenience of those at work.

LITHOGRAPHIC CLASS.

The object of this class is to afford apprentices and workmen engaged in lithographic establishments an opportunity to study and practice work, which they are not enabled to do in the places where they are regularly employed. The course of construction commences with the preparation of the lithographic stone, and proceeds by regular steps until the pupil is able to finish a drawing on the stone with pen, pencil or brush, ready for the press, thus gaining a knowledge of the whole process from the "graining" of the stone to the production of finished copies from the press. This class is attended by 18 pupils, who, under the able teaching of Mr. J. Labelle, have produced a number of creditable studies.

PLUMBING CLASS.

This class is open only to plumbers' apprentices and those employed in plumbers' and steam fitting establishments. The workshop is fitted with benches, melting pots, tool chests and all necessary appliances to accommodate thirty-two working pupils. These places are all filled, and there were many applicants who could not be admitted for want of room. The instruction is given under the immediate direction of the Master Plumbers' Association, and consists of a course of practical work on seams, overcast joints, cup joints, traps, horizontal or upright pipe joints and branch joints, wiping on a stop-cock, wiping a flange and wiping on a ferrule. Short lectures or "shop talks" follow each evening's work, on the subjects of "Soil Pipes," "Trapping and Ventilation," "Supply Pipes," "Boilers and Mixtures," "Tanks," "Fixtures," "Common Mistakes in Plumbing," and other subjects of useful knowledge to every plumber. It is most pleasing to notice the close attention of the young workers, who are kept as one subject until they have thoroughly mastered it, and they exhibit with evident pride the results of their study and practice. The progress in this class is highly satisfactory both to the pupils and their masters, and the interest the latter are taking in the class is an example which employers in other industries would do well to follow.

DECORATIVE PAINTING.

This class is taught by Mr. F. E. Macdonell. Pupils before entering must have a good knowledge of drawing. The object of this class is to assist those who wish to have a thorough knowledge of decorative painting according to the rules of art.

PLASTER WORK AND SCAGLIOLA.

Mr. R. Rogers is the teacher of the above subjects. This most interesting class was instituted for the purpose of teaching plasterers, house decorators and others, the higher grades of plaster cornice work, casting, ornaments, etc., and for the instruction of pupils in the art of making scagliola. Scagliola is a species of coloured plaster or stucco made in imitation of marble, the manufacture of which is not commonly known in Canada. Scagliola is quite equal to marble for interior decoration, and is produced at a fraction of the cost of the latter.

The last class organized, but by no means the least in importance, is the

PATTERN MAKING CLASS FOR BOOT AND SHOE MAKERS.

under the direction of Mr. Joseph Godin. The course of lessons is intended for shoemakers generally, and particularly for those who wish to have instruction in the study and practice of pattern cutting as applied to the manufacture of boots and shoes. The studies are of a very practical character, the pupils first making, reducing and enlarging patterns of all kinds, and afterwards fitting them to the cast.

CANADIAN SOCIETY CIVIL ENGINEERS.

A PAPER on two bridges over the River Ottawa at Vaudreuil and St. Anne's Locks was read at the meeting on the 5th inst., by Mr. C. E. Dowdell. At the meeting on the 19th inst., a paper on "Cedar Block Carriage Ways" will be read by Mr. Alan Macdougall.

The contractors of St. Thomas, Ont., have granted the request of the Carpenters and Joiners Union, that nine hours be considered a day's work on Saturday, and that the men be given the last hour of that day.

The Toronto Master Plasterers' Association has elected the following officers: President, F. B. Lockwood; Treasurer, John Boyce; financial secretary, J. W. Kennedy; secretary, John Knox; delegates to the Toronto Builders' and Contractors' Association, F. B. Lockwood, R. Dancy, J. W. Hynes, J. W. Kennedy and George Raden.

APPRENTICESHIP.

AT the recent convention of the National Association of Cincinnati, a special committee appointed (consisting of Builders of the United States held recently at the question of apprenticeship presented the following valuable report:

Your committee, in whose charge was left that important question known as the apprenticeship system, have thoroughly revised past methods in their relation to past conditions; have visited manual training schools existing as adjuncts to school of technology, or as departments of the public school system; have inspected the celebrated mechanical trade schools, established and maintained in the city of New York by the philanthropy and liberality of Col. Richard T. Auchmuty; have had the privilege of a lengthy interview with the generous founder, and make the following report:

We find that the old system of apprenticeship, under which the boy who wished to learn a trade was "indentured," or "bound out" to an employer for a term of years, has been gradually falling into disuse from natural causes, until scarcely a vestige of it remains.

In our opinion there is no encouragement for a revival of this old system, for the following reasons: Fifty, and perhaps even twenty-five years ago, the employer in the building trades worked with his own hands, and being continually present, could give proper instruction to the apprentice. Then the employer began to employ a foreman, and a general assistant had an oversight of his habits, and could control his general conduct to the end that a good mechanic should be the result.

The situation to-day is widely different. Employers seldom work the trade, and for the reason that there is a great increase in the volume of business, and because new and quicker methods of work have become as desirable and necessary that the time of the employer is fully occupied in attending to business details and in general direction; he seldom or never takes time to instruct in practical hands or remains long enough upon actual work to instruct in that practical way which was possible formerly.

As the apprentice is, therefore, largely in the charge of the workman, foreman or other employees give such general instruction as may result from their good nature, or sense of duty to the boy or to their employer.

It is a fact which cannot be disputed that there is at present no such thing as regular or systematic teaching, the apprentice is left to "pick up" his trade instead of having it taught to him.

We are strongly of the opinion that the tendency of modern methods of conducting work, and the reason that there is no general conditions which made possible the "old apprenticeship system;" and this opinion, together with the fact that under broader opportunities for education there is, undoubtedly, a much higher grade of intelligence to-day than in the past, and that we must also take into consideration much more than formerly, so that greater proficiency is required in the various branches, leads us to the conclusion that apprentices must be taught and mechanics must be trained, and that different methods from those in vogue under the system referred to.

These new methods may be briefly described as a combination of schooling pure and simple, and practice pure and simple; or, in other words, of a course of instruction under regular instructors (the school) to be paid for the same as any technical course is paid for in other professions) and a course of practice, under employers, on natural work, which practice or service shall receive appropriate wages.

These two courses will form a comprehensive and complete system, which, when fully understood and thoroughly operated, will produce a better class of mechanics than the present no-system, or the best lap-lashed system, and will leave as little to chance as possible.

The first step will be the establishment of mechanical trade schools, whose definite purpose shall be to give preparatory instruction in the sciences or technique of trades to young men who intend to follow mechanical pursuits for a livelihood, this preparation to be supplemented and followed, and the education completed by a term of service on practical work under actual employers, which term shall be shorter schooling than upon an account of need by virtue of the preparatory course in the trade school.

While we admit that "Elementary Manual Instruction" as already introduced to some extent in the public schools, is valuable to the ordinary scholar (inasmuch as it may cultivate a certain amount of manual dexterity and create a taste for mechanical results), we are still strongly of the opinion that for the practical training of young men who intend to be mechanics, special instruction must be had in mechanical trade schools as an introduction to the course between the public school and that actual service with the employer where his education will be completed and from which he may graduate as a journeyman.

We believe that these practical mechanical trade schools should not be a part of the public school system, but should be established and maintained by private enterprise.

We also believe that these schools should not be established or maintained exclusively by any distinct association of builders, but are emphatically of the opinion that such associations should co-operate with them, and that such co-operation is essential to insure their success as the first stage in the education of the mechanic, as well as to establish the fact that builders recognize the school as part and parcel of the new system.

The legitimate and proper method of cooperation in this system, so far as associations of builders is concerned, should be by encouraging private enterprise to establish these schools; offering to assist pecuniarily until they become self-supporting; agreeing to give preference of employment to graduates from the schools; joining in the management by appointing committees to approve methods, and examine students in establishing their proficiency, which shall entitle them to certificates of graduation.

We are convinced that there is abundance of capital that will gladly be invested in enterprises of the kind as soon as associations of builders demonstrate a belief in their practical use by lending aid in the way suggested.

We recommend that the National Association of Builders approve of the following detailed method to take the place of the old apprenticeship system and secure its approval and adoption by all similar associations as rapidly as possible, to the end that mechanics may be taught upon our own soil and American boys given the best opportunity possible to become proficient in the building trade.

Method approved by the National Association of Builders to establish the right of any person to be known as a regular journeyman in the building trades.

1. The serving of a regular course of instruction in a mechanical trade school and graduating therefrom with a certificate of proficiency granted by the same, under rules and regulations approved by a committee of master mechanics, who may unite in the management of the said school.

2. Service for a term of practice with an employer on actual work, this term to be at least one year less than the usual term of apprenticeship by virtue of the holding of a certificate of proficiency granted by a mechanical trade school. During the term of service the young man shall be known as a "junior."

3. The completion of the education of the mechanic to be acknowledged on the part of the employer by the issuance of a certificate from the association of builders to which the employer may belong, which shall state that the holder has passed through the preparatory course at the trade school, and the term of practice with an employer (name and location given) with satisfaction and credit, and is entitled to be received by all builders as a journeyman.

LONDON.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

THE contracts for the new medical school have been let as follows:—Carpentry, J. C. Dodd & Son; brick work, Jas. Luney; painting, A. Corp.

The contract for stands and fencing for the base ball grounds has been awarded to Messrs. Fawcett & Jones.

The architects held out for some time against signing the revised contract conditions, but finally yielded.

James Johnston, brick merchant, is building a double house to cost \$5,000.

Wm. Thornton is going to build a double house to cost about \$3,500.

Plans are prepared for a sanatorium to be built at the foot of Dundas Street three stories and basement with large swimming pond attached, the probable cost of which will be \$35,000 or \$40,000.

MONTREAL.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

NOW that the last of the frost is disappearing, the building boom is getting well under way. The winter coverings are being removed from the foundations of the New York Life building, and the derricks are placed ready for work.

Messrs. William Davis & Son have completed the derrick station for the new C. P. R. Depot, and the bricklayers are already at work. Fifty stone cutters are engaged preparing the way for the masons, who commence work on the 12th.

The brick work of the G. T. R. depot is completed, and the handsome roof is nearly finished.

The large stone building recently occupied by Gustave Fabre, which was destroyed by fire, will be replaced by two fine stores at a cost of \$25,000.

The Imperial Fire Insurance Co. have let the contract for their building—Mason work, Peter Lyall; carpenter work, Simpson & Peel; iron work, H. R. Ives; steam heating and plumbing, R. Mitchell & Co.

OTTAWA.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

THERE is an unusually large amount of building to be done in Ottawa this year, and already operations have been commenced on many buildings of importance. It is expected that the departmental buildings on Wellington street, will be completed this year, and the new printing bureau for the Government has been commenced and will be pushed forward rapidly. The Bank Note Co.'s building has been erected, and during the winter months, but the under house is likely to delay matters, as two of the walls have shown signs of weakness, and have taken to themselves somewhat grotesque shapes. Tenders have already been taken for a number of residences, three school buildings, a large stock of stores, and a few alterations to existing buildings. The builders are at work with the Y. M. C. A. block, and architects and builders are looking forward to a brisk summer. A considerable amount of interest has been taken in the decision of the City Council to appoint a Building Inspector. It is generally felt that the appointment of such an official is absolutely necessary.

A WORD OF ENCOURAGEMENT.

Editor CANADIAN ARCHITECT AND BUILDER.

SIR,—You have made such a noble start as a pioneer in the path of Canadian architectural journalism, that with this third and best number before me, as one of the profession, I feel that I cannot do less than offer a word of praise and encouragement until enabled to give you more substantial assistance.

I am especially pleased that the extracts from Mr. Simpson's paper have been given a wide circulation than by its first reading, and trust that not only draughtsmen but mechanics generally have become subscribers and benefited accordingly.

I will add in Mr. Simpson's hints that as well as furring beams, &c., the studding at stairs and other openings in floors should be continuous from storey to storey with no joists or other horizontal timbers between to shrink and settle, and wherever possible partitions should stand on beams, walls or partition heads below joists rather than on top of joists and floors.

In studding also the internal angles should be returned solid, allowing no lath to run behind and through to other rooms. This can be done by a strip of inch board or the stamping at brick walls, and will prevent a crack in plaster.

For the height of handriming I would suggest say a foot to ten, perpendicular above centre of step and on landing, as more constant than measuring from nosing.

To avoid warping, which is so great a disadvantage in oak door sills, window sills, steps, saddle boards, casings, etc., the heart side of the board or plank should be dressed or exposed. This is not by any means known or understood, and the sap side is generally dressed because more free from knots, &c.

I am sorry to believe that less interest is taken in this and other self-improving studies by mechanics than formerly, and would earnestly recommend such methods of getting higher pay as far preferable to those apparently now taught by the unions.

The present employers have been workmen themselves, and now by care and industry, occupy improved positions which strikes and boycotts would never have given them.

With sincere wishes for the success of your undertaking,

I am, yours,

M. D. AYLSWORTH.

The Canadian Government is contemplating the construction of a pier, pier wharf and light-house in the River St. Lawrence at Lower L'Ancre. The cost of the proposed work will be \$100,000.

Mr. Manson Campbell, Chatham, Ont., has let the contract for his new residence as follows:—Carpentry, R. McKee, for the woodwork; Jas. Oldershaw, masonry; Judson, painting; Watt & Son, plumbing. The cost will be about \$5,000.