

THE CRAFT SCHOOLS OF AUSTRIA.

By A. S. LEVETUS.

THE schools with which this article deals are the so-called "Fachschulen," scattered over Austria and her Crown lands, and having for their purpose the training of good workmen in particular branches of trade, and the application of art to manufacture. Originally they were founded for the purpose of reviving home industries, which had almost become a lost art. Their later aim is to create superior workmen, fully equipped both practically and scientifically, not only as far as regards their own particular trade, but also branches allied with it; in fact, to give them "something of everything and everything of something." These schools come under the category of "secondary" schools; they stand midway between the elementary schools on the one hand, and the "Kunstgewerbeschulen," or schools of applied art, and the Imperial Academy, on the other hand. The Fachschulen train workmen, the Academy and Kunstgewerbeschulen artists and teachers. But those attending the Fachschulen and showing particular talent are, after having passed through the courses there, provided with stipends and sent to a Kunstgewerbeschule at Vienna, Prague, or Lemberg, there to receive the higher training necessary for becoming artists or teachers. These "Fach" schools are, as are all schools in Austria, under the direction of the Ministerium für Cultus und Unterricht, special inspectors being appointed for periodical inspection. Each school is managed by a director, who has under him a staff of professors and assistants. The office of director is no sinecure, for he must be a master not only in theory, but also in practice. There are about a hundred-and-fifty Fachschulen belonging to the State, and seventy which receive State aid. They are situated in all parts of the Austrian dominions, not only in towns but in remote places in the mountain regions.

As certain trades and home industries have from times immemorial been confined to certain districts, great care has always been taken when planting schools that the teaching shall conform to that particular industry; not, however, to the exclusion of other trades, for in many cases new ones have been introduced. Hence the schools are varied, and they may be either purely technical or such as give instruction in art and its application to industries. It is of these latter that I wish to speak more especially. There are schools for pottery-making, weaving, stonecutting, modelling, jewellery, stone-setting, cabinet-making, basket-making, locksmiths, glass-making; in fact, for every conceivable subject. The relations between manufacturers and the schools are most happy; the schools do not enter into competition with them, but the pupils are eagerly sought after when they have completed their courses. The evening and Sunday morning classes for apprentices and assistants are very well attended, as also the special courses for masters. These masters are small manufacturers employing a few hands—often only a boy; but they are eager to improve, and connection with these schools keeps them in touch with the outer world, from which they would otherwise be cut off. Not only do masters, men, and apprentices receive instruction in drawing and allied subjects, but they are allowed to take books from the library for home reading, and borrow modern patterns and designs, which are supplied to the Fachschulen by the Austrian Museum. Hofrat von Scala is the director of the Museum and also the inspector of these schools, so that they are always in touch with the Museum.

The fees are nominal; in most cases only a small subscription, equal to tenpence per term. This is naturally excused in many cases, for those attending the schools are mostly so poor that their parents would find it very difficult to pay even this small sum. In the districts where the people are better off Austrian subjects pay from two to five kronen per term, foreigners from twenty to fifty kronen (a krone is 10d.); but no foreigner can be admitted without special permission from the Ministry of Education. Attached to all schools are a number of small stipends given by the Ministry, the Board of Trade, towns and guilds, as also private persons. These in most cases cover the whole expense of the training, including board and lodging, and are only given to really deserving boys. Each school is provided with a library, containing technical and instructive works bearing upon art-industry in general, and on the subjects taught in the school in particular. There is also a special fund, supplemented by the State, for providing the library with current literature on art, architecture, applied art, and allied subjects, in German, French, Bohemian, and English. The books and magazines are lent free to the pupils, either to read in the reading-room or at home. This applies also to those attending the evening and Sunday morning classes.

As a rule no pupil is admitted to the day classes who has not satisfactorily passed through the eight classes of the elementary schools (Volks- und Bürgerschule), and has completed his fourteenth year. This is, however, no drastic rule, and for many reasons. A boy may be very dexterous with his hands, and not with his brain; very intelligent, where one branch of learning is concerned, and yet unable to obtain proficiency in other subjects. Again, many who attend these schools come from villages in the mountains, and are children of parents ignorant of the three R's. Besides, anyone travelling in the Tyrol or Riesengebirge will easily realise how difficult—nay, how impossible—it would be to provide each mountain village with even a Volksschule, which has five classes, while a Bürgerschule has six, seven, and eight classes. In sowing and reaping seasons there can be no school, as the children are needed to work in the fields, for the poverty in such districts is great indeed. And during the hard winters they must go through deep snow, often a journey of two hours, before arriving at a school. Away up in the mountains five or six families perhaps constitute a village, and all villages have not even churches. But deficiencies in early education are made good, for pupils are admitted for the first year as "Hospitanten," and during this time are taught, in addition to the Fachschule subjects, those of the elementary schools. At the end of that time, and after having passed a satisfactory examination, they become ordinary pupils of the Fachschule. There are, for obvious reasons, no restrictions regarding elementary education for those attending the evening and Sunday morning classes. The duration of a course of instruction depends entirely on the nature of the particular trade in which the boy is to become an expert—two, three, or four years, as the trade demands. The ages vary from twelve (nominally from fourteen) to sixteen, seventeen, and eighteen.

Certain advantages are allowed to pupils trained in one of these schools: in all cases its certificate of proficiency is accepted in lieu of apprenticeship, so that, having satisfactorily passed through the classes, a pupil may at once enter on his trade as a journeyman; the government also recognises the higher standing of these schools as compared with ordinary apprenticeship by excusing pupils from one year of military service—that is, they serve two years instead of three.

The school buildings, workshops and outbuildings of all those schools I visited are large and airy, fitted with modern machinery, kilns, etc., according to the nature of the particular school; there are laboratories for experimenting, and no expense is spared in the finding out of new methods, be it of glazing or anything else connected with art and manufacture. Every care is taken that the pupils have a good general knowledge of their trade before specialising, this being a great advantage over the ordinary workshop. Art and manufacture go hand in hand, as do also theory and practice; they are never taught as things apart.

The mornings are devoted to theory, the afternoons to practice, supervised by skilled professional teachers, men devoted not only to their professions and trades, but also to their pupils, for everywhere have I noticed that true union between teacher and taught which alone can bring success to a school. Lectures on various subjects are given with scientific illustrations, some on the history of art and industry, others on the trade of the district and trade in general, and on subjects of general interest; all possible help is given to promote culture as well as educate, the essential thing inculcated being "skill in some useful labour."

In every school a certain number of hours every week are devoted to commercial education, book-keeping, shorthand, commercial arithmetic, and allied subjects.

The school hours are from 8 to 12 a.m. and 2 to 6 p.m. The time devoted to drawing and designing depends entirely on the nature of any one particular school; for instance, in a school for ceramics a much longer time would be devoted to these subjects than in one for weaving. In summer excursions are made (this I learnt at Gablonz), which sometimes occupy two or three weeks together, for by spending days in the open the pupils have greater opportunity of studying nature than even in a perfect school; they can then better apply nature to trade, that is, in ornamentation. In this way the workman learns to love his work, to have that true feeling for whatever lies before him which alone can make the perfect workman, he is himself ennobled by this work for he learns the true dignity of work and is infected by it.

Petroleum-boring operations are proceeding steadily at New Plymouth. An average of ten barrels of petroleum is being obtained daily, and there is a good demand for the product. The syndicate contemplates extending its field of operations shortly.

NOTES ON EARTHQUAKES AND THEIR RELATION TO BUILDING CONSTRUCTION IN NEW ZEALAND.

By F. DE J. CLERE, F.R.I.B.A.

THIRD PAPER.

High pitched roofs, especially if covered with heavy material like slate, have a bad effect on the gables, owing, no doubt, to the strong momentum given to them by a shock, and the fact that they do not synchronise with the walls abutting against them.

It appears to me that, generally speaking, an earthquake leaves a loose brick or stone very much in the position it was before the movement began, and if a wall be allowed to swing freely it is much more safe than if it is tied to a body of a different degree of rigidity with a view of supporting it. No doubt this is why high and unsupported parapets, which have been a menace to all below them, have not suffered as much as might be expected. At the same time I feel that any unnecessary architectural features should be forbidden.

The points which strike me with regard to possible alterations to our by-laws with special reference to earthquakes are the following:—

1. Foundations on reclaimed land should be deep as well as wide, and should be of concrete not weaker than of one part of best Portland cement to seven parts of aggregate. I would suggest that one-twelfth the height of the wall they are designed to carry should be the minimum depth of foundation.

2. Although much has been said against floating foundations, no theory that I have heard advanced would appear to be against them in the matter of earthquakes, but I need hardly say that they should be wide and deep enough to bear the structure resting upon them.

3. The use of iron-binding wires, rods, or hoop iron, should be compulsory in brickwork, and also that the metal should be laid in cement.

4. That concrete used in cornices, heads of windows, and in wall construction generally, shall not be weaker than the proportion of one part of best Portland cement to six of aggregate will give, and that generally iron wire or other material should be laid in it to increase its tensile strength.

5. That the clause relating to joists and their supports should be altered so as to encourage their resting on corbelled courses. At present the law insists on their being built in the walls, that is, supposing the walls to be straight on the inside, as would be the case were the "off-sets" put on the outside. This method of throwing the front face of the building inwards has much to commend it.

6. That ordinary lime be forbidden as the matrix of mortar in all rubble work; the best hydraulic lime or Portland cement being used in its place.

7. Where high gables are necessary for architectural effect they should be framed so as to synchronise as much as possible with the roof below them. This framing could be cased with fireproof material as is mentioned under the notes of the "barrack system" of building.

It is obvious from experience gained that the weight of buildings should be reduced as much as possible in their higher parts, and for this reason I would be an advocate for allowing mansard roofs (under similar restrictions as those issued in the London Building Act) to be used. I fear it would be impossible to frame precise rules as regards cornices and projections generally, for, whether they are safe or not depends so much upon their position, and of the weight of the materials of which they are constructed. I have had some experience in compiling laws, and have a lively sense of the difficulties in framing them to meet special cases without their being frequently oppressive in the hands of officials who can only read the "letter of the law" without understanding its spirit.

In conclusion, I would say that the comparative unimportance of the damage done to New Zealand buildings by the 1904 earthquake, which, I think, is acknowledged by all to have been a severe one, is a matter of great congratulation. With the experience which we have gained in the last ten or fifteen years, and the conclusion drawn from this experience, the older architects should be able to design buildings capable of withstanding any ordinary earthquake. Younger men will have, of course, to buy their experience; but this is a natural law which cannot be obviated. I trust, however, that these few notes may be of some service in promoting discussion, and exchange of ideas; and I may hope that they will be accepted as a simple expression of opinion and not as actual axioms in a science, of which, after all, very little is known.