

THE CROWN PIECE, by Mr. William Wyon, R.A., is a beautiful specimen of coin engraving, and creditable to the artist and to the country; but I cannot help regretting that it should be disfigured by a practice that "would be more honoured in the breach than the observance;" the inscription in the old abbreviated Latin. Have we a language of our own? is it copious, precise, expressive? or are we ashamed of it? Is not an English coin, as well as an English Act of Parliament, intended to be used by, and made for the English people? Or is the Latin language the vernacular idiom of the country? If not, why employ it in the laws and on coins of the realm, which ought to be known to, and duly valued and understood by every person, whether rich, or poor, learned, or illiterate? But custom, common-place prejudice, govern or hood-wink too many, even of the thinking portion of society. "The diffusion of knowledge" has done much towards dispelling these clouds, improving the general intellect, and it will ultimately, I hope soon, correct the errors and absurdities here complained of. As the poet Crabbe has properly said "the dead languages ought to be buried." J. BRITTON.

July 22, 1847.

#### EDUCATION FOR CIVIL ENGINEERS.

THE objects which the College of Civil Engineers at Putney has in view;—namely, "To provide for the rising generation a means of obtaining instruction in sound scientific principles, while at the same time they are acquiring that knowledge which practice alone can impart," is so important to the great interests of the country as to claim our attention in a considerable degree; and lead us, without pledging ourselves to the excellence of all the details of the plan adopted, to give publicity to the views of the directors, as set forth in the address of the Principal, referred to last week. No one can deny that, "it is a wise and patriotic endeavour to provide, for those who wish to make engineering their profession, means of acquiring that sound knowledge without which immense and valuable undertakings are exposed to be ruined by the rash schemes of ignorant pretenders, or the mismanagement of those who depend only upon mere blind technical rules, without power to adapt them to altered circumstances."

"To know how a bridge, which is to carry a certain load, should be constructed, is entirely within the province of the scientific man. He takes the data of the experience of the past, and knowing the laws that govern the resistance of matter, he can say with confidence, 'this design, if carefully and faithfully executed, will answer the purpose.' There is no room for difference of opinion. The laws of mechanics admit of no doubt. How is it then that we find architects and engineers contradicting one another on the plainest point? on questions the calculation of which is easy to any who know the elements of statistics? How is it, that in cases of failure occurring so frequently, the authorities appealed to express opinions so widely different? I firmly believe it to be because these authorities are only, in most cases, those of practical men, who know not the laws of the results which they have witnessed in the course of their professional experience; and not knowing these immutable laws, they are apt to generalize falsely, and apply to particular instances their general rule, without discriminating efficiently between the data.

I am alluding to cases which have occurred within the last twelve months, and which to professional men will readily suggest themselves, and I think it a matter for serious consideration on the part of her Majesty's Government, whether or no engineers to whom is now entrusted the lives, and limbs, and property of her Majesty's subjects, shall be allowed to exercise their valuable and important profession without some guarantee to the public, that those who undertake to do so have really had such education and preparation for their duties as shall enable them to perform them with advantage to the public, and a due regard to the welfare of the country. A time must come when an authorized board shall be appointed to examine persons who wish to exercise the profession, and then it must be a *sine qua non*, that the candidates shall shew an

intimate acquaintance with the properties of matter, and the natural laws of mechanics. Such a knowledge it is our constant object to give in this college, but inasmuch as we know that knowledge without practice is not ready and available, we also place this latter most important requisite within reach of the student.

The experience of past ages of the civil engineer and the contractor is also brought before the students; they visit railways and public works in course of construction, and then see the operations of which they read, and of which plans and explanations have been given; they see these operations being carried out. Our system is not to give theoretical instruction alone, but to give practical along with it. We manufacture machinery; we have constantly pattern-makers, fitters, vice-men, moulders, and smiths at work on the premises, executing works such as may be seen in the more extensive workshops of our chief engineers, and thereby we supply them with the knowledge that actual practice gives, while, at the same time, we also give, what could not be done in a large manufactory, constant instruction to each individual in the principles which guide these operations, and urge the students, by industrious application, to master both the practice and the principle, both the experimental facts and the theoretical truths; and thus we endeavour to remedy that wherein we conceive that engineering education has been hitherto defective.

Objections are made to the college sometimes on one ground, sometimes on another.

"You cannot make men engineers by mere theory," says one. No doubt of it; we do not pretend to do any such thing; we wish to give theory in addition to practice, not theory alone. We say, engineers ought to be men whose operations are conducted on certain principles. Those operations should not be merely tentative; we wish to supply the exact, positive, undeviating laws of mechanics; to give the student that confidence which science alone can give, that his unskilful attempts may not be the cause of death, or mutilation, to others. Engineers should be scientific men, as well as practical, and science is not acquired so easily as a scientific reputation is.

Again, when some of those who have been educated within our walls have gone forth into the world, they have been tried and found incompetent.

This is very possible; we are not so foolish as to think that mere residence in a college gives knowledge. I must particularly request our engineering friends to give me their attention when I allude to the matter. They should not judge the college by any of our students, unless these latter bring certificates of their competency from the college authorities. I, for my part, emphatically and distinctly disclaim any responsibility whatever for those who leave the college without certificates, countersigned by myself, and, on the other hand, I will venture to defy any engineer to convict a student of incompetency who has been so recommended. I am confident that during my direction of the college, none have received certificates without searching examination, and I am fully convinced that they have been competent to undertake such work as might fairly be intrusted to young men, with certainty of giving satisfaction to their employers.

#### PARIS.

THE *Moniteur des Architectes* says that the church of Notre Dame has been furnished with lightning conductors, and expresses a hope that this precaution will be adopted generally throughout France.—A model of a design for a subterranean street between two leading railways is being exhibited at the *Palais Bourbon*.—Some curious discoveries have been made in lowering the *Rue François Miron*, including a number of tombs, some in plaster, belonging to the fifteenth and sixteenth centuries, and others in stone of much earlier date.—The cupola of the *Salle des Pas Perdus*, at the *Palais de Justice*, is giving way. It appears certain that the evil is great, and that very considerable works are necessary. It is attributed to the failure of the foundations in part.—A complete renumbering of all the houses and buildings in Paris is to be immediately commenced, they say; it is to be done by means of plates of enamel, with white figures on a blue ground.

#### RAILWAY JOTTINGS.

A PROJECT of law to expel railway directors from the French Chambers has been introduced by M. Cremieux, and referred to a committee.—A verdict of 800*l.* damages has been awarded by jury for injuries sustained by a Mr. Bromley and his wife on the Eastern Counties line, on 18th July last.—The jury in their late verdict against Fossey for the Wolverton collision, declared that two attendants were necessary at the siding, instead of one alone.—It is but fair to record, however, that the Wolverton accident is said to be the first that has occurred, on that part of what is now called the London and North-Western, for nineteen years, during which time 'the company,' namely, the London and North-Western, have carried 35,000,000 passengers along this line,—an enumeration, however, which looks a little like an attempt to throw dust into the public eye. The number of servants employed by the same company is said to be 6,418, exclusive of plate-layers.—The *Sheffield Iris* describes an Itinerarium, or railway compass, to ensure more punctuality on railways, and thus, also, to aid materially in the prevention of accidents. It will at all times shew to the engineer the speed of the engine, the distance to the next station, and the exact position on the line, which will be useful at night, or in foggy weather. There is a chronometer, which will, of course, shew the railway time. It will also register on paper a description of the journey, that is, the time occupied at each station and during the journey, and the exact speed travelled during every mile. Several trips on the Manchester and Leeds have tested its utility.—The daily expenses of the Great Western in the present Parliament have been estimated at 4,500*l.* a day, or 30,000*l.* a week.—The repairs required for the Dorchester Tunnel, says the *Hampshire Advertiser*, turn out to be far more formidable than was at first acknowledged, and the report of Mr. M'Adam, as to the danger of the traffic being opened through it for a considerable time to come, has compelled a deference to the public safety. The repairs are proceeding, therefore, with due caution, and it will be a long period before the tunnel will be re-opened.—That part of the new bridge under the turpentine road leading from Dudley to Birmingham, near Dudley Castle, says the *Worcester Journal*, and under which the Oxford, Worcester, and Wolverhampton line will pass, has been repaired since it fell in, and the workmen are now employed in removing the earth from off the sides of the two ends of the bridge, on to the centre of the arch, for the purpose of causing it, by the additional weight, to spring into its place. Whether it will have the desired effect or not, remains to be seen; many persons considering it will not be safe, or to be relied on, till the whole bridge is pulled down and rebuilt.—On Thursday week, a locomotive Post Office, with human and other machinery complete, was dispatched from Bristol, with the mails to Exeter.—On Thursday week, one of the arches of the viaduct now in course of construction at Dewsbury, on the Leeds and Dewsbury line, gave way and fell in, "owing," says the *Halifax Guardian*, "to some workmen, who were working in the night, having inadvertently put too great a weight of stone on one side of the arch, before the other side had got sufficiently backed up, which caused the centres to give way, and the whole mass of masonry to be precipitated to the ground." The contractors, Messrs. Crawshaw, however, are said to have "spared no expense in the erection of substantial scaffolding and other preparations necessary for securing the safety of so heavy a mass of masonry as this is."—Messrs. Fell and Jopling, contractors for the portion of Furness railway between Dalton and Lindale, broke ground three weeks ago. In this contract there will be a tunnel 300 yards in length; fifty excavators are at work on it.—One of the main arches of the high level bridge at Newcastle, says the *Gateshead Observer*, is now complete, and has been exposed to a test of extravagant severity, doubly exceeding any trial to which it can by possibility be put by the ordinary traffic of the railway.—The fourteen hours time distance between London and Edinburgh, says the *Scottish Railway Gazette*, is now a great fact, as 'the thing has been done.'