several miles from the extreme edge of the mountain, and was upwards of 600 feet high, the water falling in various pitches and declined planes from the top to the bottom. Wherever the water found a depression in the surface of the gneiss it lodged there, and on the first fortuitous pebble coming into cavity the work of destruction would begin, the current incessantly whirling about the pebble, and grinding the sides of the rock until a *pot-hole* was formed. These were there in great numbers, some of them four feet in diameter, and six feet deep. Where great numbers abounded, and parietes became at length weak, and giving way, all the pot-holes would coalesce in one. This process being repeated in various portions of the rock, the cohesion of the mass became diminished; and at the season of periodical floods, huge masses, weighing forty tons and upwards, would be precipitated to the bottom. This was the state of the great fragments at the bottom of the ravine, all of them bearing evidence of having been dislocated by the power of the water exercised upon the pot-holes. Such was the method by which this gorge, several miles long and about 600 feet in depth, had been ground out of this mountain of gneiss. At this locality were the evidences of the volume of the river having once been at least ten times larger than at present. A semi-circular ledge of gneiss, at the top, east of the stream, and 1,200 feet wide, was worn bare for a great distance, and down its perpendicular face was concave, as if the river had been projected over the top, and the screen of water in face of the concavity, and the concussion, and the moisture, had produced the usual effect, of peeling off the coats of the rock. It presented much such an appearance as the rock at the Horse-Shoe Fall at Niagara would do if the water were to be so much diminished at that point as to abandon it, and to be projected only from the comparatively small fall of the Schlossa, on the American side of the river. For the other example of the *subtracting*, or undermining power exercised in the recession of cataracts, the Falls of Niagara were taken, of which a flat view was given, together with a section of the rocks. Mr. Featherstonhaugh had published a paper, in 1831, explaining the recession of this cataract. It is well known that the river Niagara flows upon a bed of limestone from which it projects itself, and that this rock is supported by a strong bed of friable shale upwards of seventy feet thick. The moisture arising from the screen of water, the current of wind behind it, and the concussion, loosen and remove the shale, and the superincumbent limestone losing its support falls down. In this manner the cataract has receded at least six miles from the Queenston heights. Mr. Featherstonhaugh expressed an opinion that this operation of excavating long channels of rivers, as in the instance especially of the Mississippi, may be considered in the class of providential arrangements, since by it the lakes, swamps, and immense swampy surfaces become drained, and rendered salubrious and productive habitations for man. There were many other interesting points brought forward in this paper, of which we have only room for this abstract.

Colchester Literary and Scientific Institution.—We referred last week to the formation of this institution. Since then, a public meeting has been held, at which various resolutions were agreed to, among them the following:—"That the requisite funds be raised, partly by donations and partly by shares of 10*l.* each, bearing interest at 4 per cent. per annum; and that as soon as the sum subscribed be sufficient to justify such a step, a convenient site be selected, on which to erect an appropriate building for the purposes of the institution." Before the meeting separated, donations and subscriptions were announced amounting to upwards of 700*l.*

Cost of French and English Railways.—The cost of the Paris and Rouen Railway is put down by Mr. Laing, of the Board of Trade, at 24,000*l.* per mile; Paris and Orleans, 24,000*l.*; English passenger railways generally, 34,000*l.*; and the average of the Birmingham, Great Western, and South-Western lines, 47,000*l.*

SOCIETY FOR PROMOTING THE IMPROVEMENT OF COTTAGES.

Some months since a society was formed on the Northumberland and Durham borders of Scotland for the improvement of the cottages of the peasantry. The persons chiefly instrumental in forming the society were Dr. W. S. Gilley, of Durham, Mr. Ralph Carr, and the Rev. Edward Fielde, of Rennington. The inauguration meeting was held at Alnwick, Charles Bosanquet in the chair, and the following resolutions were carried:—

"That a society be formed for encouraging and recording the improvement of cottages in the northern division of Northumberland.

"That the thanks of the meeting be given to Ralph Carr, Esq., for his exertions in promoting the present meeting; to Mr. Fielde, for his cordial advocacy of the measure; and to Lord Frederick Fitzclarence, for his practical illustration of cottage improvement at Etal."

Dr. Gilley, while writing last week to the editor of the *Morning Herald*, says:—"I am happy in being able to add that the cause continues to advance in Northumberland and on the borders of Scotland; and I was lately informed by an architect, who has had considerable experience, that a spirit prevails which leads him to expect a general improvement in the habitations of the labouring classes.

Correspondence.

ARCHITECTURAL COMPETITION.

TO THE EDITOR OF THE BUILDER.

Sir,—Your Leamington correspondent's condemnation of the Reading competition, I consider rather premature; as far as I can judge, every thing has been conducted with perfect impartiality and fairness, with but one exception, and that is, that several designs, in which the conditions contained in the printed instructions *have not been complied with* (and which are, therefore, incomplete), have been admitted, and are submitted for the opinions of the competitors, together with those in which *every condition has been complied with*, and all the required information as to value of freehold ground-rents, drainage, &c., has been furnished. These should, I think, have been rejected, as each will naturally be inclined to give the preference to those designs which most resemble his own, and therefore, those who have been at considerable trouble and expense in obtaining information and preparing their designs will labour under considerable disadvantage, there being no instructions given for the guidance of the competitors in delivering their opinions, which might have obviated the difficulty. Trusting you will excuse this intrusion upon the space of your valuable journal,—I remain, Sir, your obedient servant,

A Regular Subscriber.

Dec. 18, 1844.

THE CHORISTERS' SCHOOL, MAGDALEN COLLEGE, OXFORD.

Sir,—The Bursar of this institution, in his letter to you of the 4th inst., states that the successful competitor for the choristers' school never had a *single glance* at any of the designs sent in to the care of the Bursar, and that he had no facility or advantage allowed him which had been refused to any other competitor. I would briefly ask, whether the circumstance of Mr. Derick's being allowed to send in his design *fourteen days* after the others had been forwarded, as required by the instructions, can be called no facility or advantage? It is mere Jesuistical sophistry to argue that such advantage had not been refused to any other competitor; *it never was asked for*, for who, in the name of common sense, would ever have dreamt of asking from the commission permission to send in his design fourteen days after time, unless under the request for a prolongation, which should be, as usual in such cases, *made known to all the competitors?*

When such sophistry as this is put forth in exculpation of a palpable injustice, it is not pressing the point logically too far to remind Mr. Bursar that a *useful hint* communicated respecting designs unseen, may be quite as valuable as a *single glance* not permitted—"*Verbum sapienti.*"—Your obedient servant,

Dec. 24, 1844. ϕ

Miscellanea.

Annual Destruction of Property by Lightning.—The amount of damage occurring annually to our public and other buildings by lightning is of a very serious character. A writer in *Nicholson's Journal of Science* has estimated it at 50,000*l.* The following are a few instances of its effects:—The beautiful spires of St. Michael's and St. Martin's, at Liverpool shattered; Christ's Church, Doncaster, ruined; Spitalfields and Streatham Churches set on fire; St. Martin's, St. Clement's in the Strand, and Brixton Churches; the fine old church of Exton in Rutland; Stannington Church; the beautiful tower of Magdalen College, Oxford; the tower of St. Michael's Church, at Cork, laid in ruins; the fine granite chimney at the Royal Victualling-yard, Plymouth; flax and cotton mills at Hull. The greater part of these were so shaken and damaged, as to demand very extensive repairs. A thousand pounds did not cover the expense of renovating the spire of St. Martin's, damaged by lightning in 1842.

Interior of the Earth.—The increase of temperature observed in mines is about one degree Farenheit for every fifteen yards of descent; and, should the increase go on in the same ratio, water will boil at the depth of of 2,430 yards; lead melt at the depth of 8,400 yards; every thing be red hot at the depth of seven miles; gold melt at the depth of twenty-one miles; cast-iron melt at the depth of seventy-four miles; soft iron melt at the depth of ninety-seven miles: and, at the depth of 100 miles, there must be a temperature equal to the greatest artificial heat yet observed—a temperature capable of fusing platina, porcelain, and indeed every refractory substance we are acquainted with. These temperatures are calculated from Guyton Morveau's corrected scale of Wedgewood's pyrometer; and if we adopt them, we find that the earth is fluid at the depth of 100 miles from the surface; and that, even in its present state, very little more than the soil on which we tread is fit for the habitation of organized beings.

The Sago-palm Tree.—Of all the palm-trees which are natives of Asia, the Sago-palmist is one of the most useful and interesting. The trunk and large leaves of the sago-palmist are a powerful resource in the construction of buildings; the first furnishes planks for the carpenter, and the second a covering for the roof. From the leaves are also made cord, matting, and other articles of domestic use. A liquor runs from incisions made in its trunk, which readily ferments, and is both salutary and agreeable for drinking. The marrow, or pith of the tree, after undergoing a slight preparation, is the substance known by the name of sago in Europe, and so eminently useful in the list of nutritious food for the sick.—*Dictionnaire d'Histoire Naturelle.*

The State Bed or Scarlet Room at Chatsworth.—This room was so named from containing the bed on which George II. died. The bed and furniture are of crimson silk damask. This, with the chairs and footstools used at the coronation of King George III. and Queen Charlotte, were the perquisites of the fourth duke, as lord chamberlain of his Majesty's household. On the ceiling is the painting of Aurora, or the morning star, chasing away Night. In the centre compartments between the windows are Diana turning the Country People into Frogs, Diana Bathing, Diana turning Actæon into a Stag, Diana Hunting. In the corner compartments are—Bacchus and Ariadne, Venus and Adonis, Meleager and Atalanta, Cephalus and Procris. Tapestry—Jupiter and Leda, Perseus and Andromeda, Apollo and the Nymph Isis, Minerva and Vulcan.

Hereford Improvements.—The Hereford Town Council contemplate the enlargement and improvement of their Guildhall. Last week, at a special meeting of the council, Mr. Leonard Johnson produced a plan of the proposed alteration, which met with very general approval. After various opinions had been advanced with respect to the plan, it was determined that as this was not the period of the year to enter upon the work, the question be further taken into consideration at the quarterly meeting in February next.