

inconsistencies and extravagances, of which we have noticed the occurrence, were results and indications of the fall of good architecture. The elements of the ancient system had lost all principle of connection and regard to rule. Building became not only a mere art, but an art exercised by masters without skill, and without feeling for real beauty.

When, after this deep decline, architecture rose again, as it did in the twelfth and succeeding centuries, in the exquisitely beautiful and skilful forms of the Gothic style, what was the nature of the change which had taken place, so far as it bears upon the progress of science? It was this:—the idea of true mechanical relations in an edifice had been revived in men's minds, as far as was requisite for the purposes of art and beauty: and this, though a very different thing from the possession of the idea as an element of speculative science, was the proper preparation for that acquisition. The notion of support and stability again became conspicuous in the decorative construction, and universal in the forms of building. The eye which, looking for beauty in definite and significant relations of parts, is never satisfied except the weights appear to be duly supported,⁷ was again gratified. Architecture threw off its barbarous characters: a new decorative construction was matured, not thwarting and controlling, but assisting and harmonizing with the mechanical construction. All the ornamental parts were made to enter into the apparent construction. Every member, almost every moulding, became a sustainer of weight; and by the multiplicity of props assisting each other, and the consequent subdivision of weight, the eye was satisfied of the stability of the structure, notwithstanding the curiously slender forms of the separate parts. The arch and the vault, no longer trammelled by an incompatible system of decoration, but favored by more tractable forms, were only limited by the skill of the builders. Every thing showed that, practically at least, men possessed and applied, with steadiness and pleasure, the idea of mechanical pressure and support.

The possession of this idea, as a principle of art, led, in the course of time, to its speculative development as the foundation of a science;

mechanical works of Archimedes into Latin, as we learn from the enumeration of his work by his friend Cassiodorus (*Variar.* lib. i. cap. 45), "*Mechanicum etiam Archimedes latiale siculis reddidisti.*" But *Mechanicus* was used in those times rather for one skilled in the art of constructing wonderful machines than in the speculative theory of them. The letter from which the quotation is taken is sent by King Theodoric to Boëthius, to urge him to send the king a water-clock.

⁷ Willis, pp. 15–21. I have throughout this description of the formation of the Gothic style availed myself of Mr. Willis's well-chosen expressions.