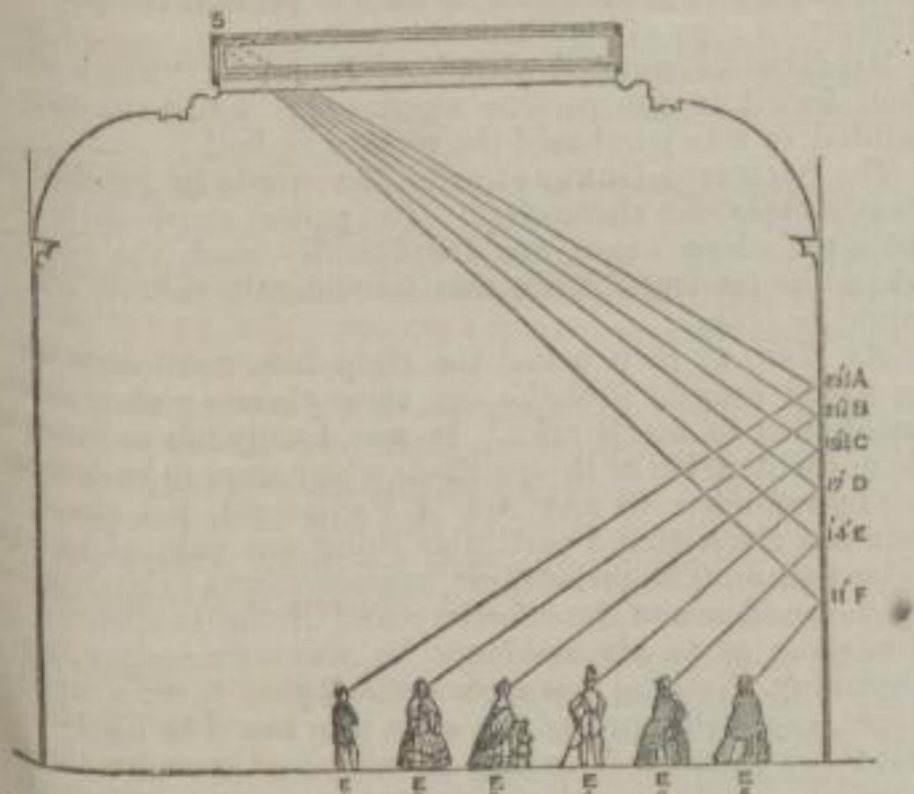


between the highest point of the cove and the eave of the calico is occupied by louvres for ventilation.

These proportions will afford the gallery as much light as possible, and glitter from the surface of the pictures will be avoided. As regards the quantity of light admitted, it may be briefly stated that the opening for admission is exactly half the floor area of the gallery, the former being 25 feet wide, the latter 50. In dealing with the quantity of light, another important point must not be lost sight of, namely, the height of the opening from the floor and its consequent distance from the picture. In this gallery this is reduced to a minimum consistency with the avoidance of glitter, being only 45' 7" from the floor.

The following illustration will explain the question of glitter, or reflection of light, from the varnish of pictures:—Supposing a mirror to be hung against the entire surface of the wall. It will be seen, by referring to the diagram, that a ray of light from the skylight, at its extremity furthest from either wall, striking that wall at A, at a height of 23' 3" above the floor will, will be reflected so as to reach the eye, at E, of a beholder (say 5' 3" above the floor) standing 5' on the other side of the centre of the room, or 30 feet from the mirror, and consequently all the rays striking below that point will fall below his eye, or, in other words, he will not be able to see the image of the skylight in the mirror at any point below 23' 3" from the floor, and, as a matter of course, there will be no glitter on the wall, or on pictures hung against it, below that point. Consequently to see pictures without glitter hung higher up, it will be necessary for the spectator to retire still further from the centre of the gallery.



Transverse Section of Picture Gallery, showing the way of admitting the light to avoid glitter.

It will be seen from the diagram that this point, which is called the glitter point, alters with the position of the beholder. For instance, E, 5 feet from the wall, the glitter point is at F, 11 feet from the floor, while in coming closer it will descend in proportion. On the other hand, by receding to a distance of 10 feet, the wall may be seen without glitter to a height of 14 feet. Looking again to the same diagram, it will be seen that, apart from all considerations of reflection, a person desiring to see a picture at a height of 14 feet, would naturally retire 10 feet if not more from it, and the same may be said of the other heights and positions shown on the sectional diagram, so that in any position in which a person can conveniently examine a picture, he may be sure of having its surface free from glitter.

This system of lighting increases the difficulty of successfully treating the exterior of the building, for it prevents any windows being placed in the upper part of the side walls, but after the very successful application of these principles of lighting to picture galleries which have been constructed within the last few years at South Kensington,

it was wisely determined to forego all other considerations, and apply the same principles to the rooms destined to receive the choicest works of art of the present age.

On ascending the stairs, the visitor enters a vestibule of similar proportions to the one below, from which he obtains one unbroken vista throughout the whole extent of the main gallery, and it is difficult to conceive a finer effect than that produced by contemplating the noble proportions of the rooms before him.

Entering the first on either side, he will find himself in a spacious hall, 325 feet long, 50 feet wide, and 43 feet high. Passing through this, he will enter one of the wing towers, which forms a room 52 feet by 45 feet, and 66 feet high; he will then enter another room 75 feet long, and of the same width and height as the first, from which he will pass into the end tower, whence he will have an uninterrupted view of the whole main gallery.

The interior decorations of these rooms will be very simple, and may be briefly described as a plain cove extending to each side of the skylight, and resting on a moulded cornice.

Arrangements for thorough ventilation, so essential to the preservation of the pictures and comfort of the visitors, are amply provided for, by admitting fresh air through apertures along the floor level, and allowing the vitiated air to escape through louvres in the skylight.

Descending to the ground floor, the same sized rooms are repeated, but as they are lighted by means of ordinary windows they will probably be devoted to other objects than those coming under the head of fine arts. The part of the picture gallery which will revert to the Society of Arts is the central hall, and the two large rooms, 325 feet long, on either side of it.

Before concluding this description of the Picture Gallery, its constructive details will be interesting. The foundations throughout are carried down to the gravel, here from 6 to 12 feet below the surface of the ground, in concrete, on which ordinary brick footings are laid. In the front wall the piers carrying the semi-circular arches are 12 feet wide, by 3' 2" thick, and the intervening panel having merely its own weight to support, is only 9" work. The back wall is of rather a different construction. This is a plain wall from top to bottom, with numerous arches through it on the ground-floor; it is built for the most part hollow, with piers so placed that the weight of the floor and roof will come on them. This system of hollow walling gives the greatest strength with the least amount of material, and secures a straight face at either side. The floor of the picture gallery has been constructed of great strength, so as to bear with perfect safety the greatest load which can be brought on it. It is carried on girders 13½ by 12, resting on the side walls and intermediately supported by two cast-iron columns. These girders cross the building at central intervals of 12½ feet, and over them are laid joists 11 in. by 2½ in., two feet apart, to carry the floor-boards. A portion of this floor has been proved to 140 lbs. to the foot, which exceeds the greatest load it can have to bear when densely crowded with visitors. The walls in the picture gallery are lined throughout with wood, which is kept at a short distance from the brickwork, so as to guard against damp.

DR. DRAPER'S INSTANTANEOUS DRY PROCESS.

An *Instantaneous Dry Process* is a startling announcement. It is of such tremendous import that there is danger of losing, for the moment, that calm philosophical temper which is so needful in the judgment upon momentous facts.

A dry process which can compete with the wet process in time of exposure, and desirable artistic effects must prevail. It would permit a division of labour which is the grand desideratum of economy in all the arts which are extensively practised. We may some day have photographic galleries when there shall be no occasion for the inconveniences of a