

33 superficial ft. diamond star glass  
 15 superficial ft. ground glass  
 40 superficial ft. stained glass, glazing on'y  
 15 superficial ft. rolled cathedral glass  
 7 superficial ft. rough rolled plate  
 1 pane plate glass, 5 ft. 4 in. x 3 ft. 8 in.  
 3 panes plate glass, 3 ft. 4 in. x 2 ft. 7 in.  
 1 pane bevelled glass, 2 ft. 3 in. x 2 ft. 3 in.  
 4 pairs blinds, &c., 3 sts. and priming  
 Cleaning windows, and scrub floors twice, &c., complete

NOTE.—Painting measured and given, superficial yards in quantities as shown. Glazing, measure superficial feet, and in plate glass at per pane, with size stated.

### CLIMATIC INFLUENCES UPON ARCHITECTURE.

By G. F. STALKER.

THE elements with which an architect is bound to concern himself in the preparation of his designs, and in the course of his practice, are so varied and so numerous that it is almost impossible to catalogue them. It is a still more difficult matter to assign to each its proper position of importance; for what would exercise a dominating influence in one country, and under a certain line of circumstances, would be of little account in another country and under changed conditions.

This may be said to be a kind of truism and so apparent as to render it almost unnecessary to be set down here. Still the fact remains, that buildings have been, and are being erected, by architects of good ability, which are disappointing and unsatisfactory. Artistically, and on paper, the designs may be most creditable to their authors; but practically, and *in situ*, they are failures. The cause of this may be the fact that this truism, like all other truisms, and just because it is a truism, is very much overlooked or neglected. And there is probably no element affecting architectural design so frequently and so easily left out of consideration as that of climate. One would think that this cannot certainly apply to Canada, for everyone knows that here we have plenty of climate. But when we are engaged upon our designs we are generally comfortably officed, and we become so engrossed in working out the architectural lineaments of some pet style or theme, that we forget that just outside the window the thermometer registers zero, the snow is deep in the streets, and the wind is keen.

The artistic treatment and scientific construction of a building are the chief characteristics which distinguish an architect from a builder. But common sense does not belong exclusively to any class of men, neither is it the outcome of any kind of technical education; and architects, like other men of professional culture, are sometimes distinguished for their want of it. And so it happens that artistic skill is often misapplied, and constructive ability absolutely wasted for very lack of common sense. We admire the beautiful conceptions of men of genius, and are sometimes tempted to imitate them, without giving a thought to the suitability of local surroundings and circumstances. Fashion is an absolutely despotic mistress over all who swear allegiance to her. And there is such a thing as fashion in art. And just as we see the votaries of fashion in dress attired in Canada in a style which is only suitable for Paris or London, so we find the followers of fashion in art designing their buildings as if locality and climate were in these days reduced, by some artificial means, to a universal dead level. But nature will assert herself in spite of us, and if we wilfully and persistently blind ourselves to the fact that dress was originally, and is still, primarily intended as a covering for our nakedness, and a protection against the scorching sun of summer and the biting frost of winter, and that buildings were, and are still, primarily erected as shelters for man, we must expect to pay dearly for our temerity in so doing.

The problem, in this respect, set before architects in Canada is, it must be confessed, more difficult in solution than in countries where the difference of the temperature in summer is not evidenced by such a tremendous dip of the mercury in winter as we are accustomed to. We do not make our own weather, but the climate of this country, like that of all other countries, is practically a settled thing, and, in a general way at least, pretty well understood. It cannot be said to be capricious, neither is it uncertain, and, on the whole, it is not very variable; one year resembles very closely those that have gone before it. But we can say this of it, that it is very decided. We have a very short spring and a very short autumn; but when summer is here, we might as well be living in the tropics, and when winter is with us we are practically absolutely ice-bound. Business men, engaged in whatever industry of our country you like to name, are forced to take our climate into their reckoning. They would be considered almost culpably careless and negligent of their duty if they did not. Even building operations must be suspended during the winter; and this, of itself, should be a sufficient reminder to architects that our climate is a very important and potent factor in true Canadian architecture.

It may be urged in this connection that we can accomplish all that is necessary to bring the natural elements into subjection by artificial means. We can defy the frosts of winter by our furnaces, stoves and winter sashes, and we can modify, to a bearable extent, the heat of summer by a judicious adjustment of summer blinds. And for such mercies, even coming "in such questionable shape," let us be thankful. But it is not wise to rest and be thankful with such a condition of things. The effects of climate have had a very direct influence upon the

minds of all the great architects of the world; so much so, that wherever a true style of architecture has grown into existence, we can, from the buildings which still remain as examples of it, almost infallibly tell what were the climatic conditions of the country and the time to which they belong. A thorough student of architecture is as little likely to go astray on this point, after a careful examination of a building, as he would be in regard to the date of its erection. And when we consider how carefully and systematically buildings were designed and erected in ancient times (for nothing was done in a hurry then) this is not to be wondered at. What was more natural than that the architects in those days, being allowed time to think, and to think of everything, should give some consideration to the climate of their country in the preparation of their designs? And to what other cause can we ascribe, for example, the difference in the forms, and particularly the slopes of the roofs, that have always been, and are still considered characteristic features of the several styles of architecture? There is nothing in the internal arrangements and formation of an Egyptian building that of necessity demands that it should be covered with a flat roof, neither is it necessary from structural or æsthetic reasons that a Gothic building should be finished externally with a pitched roof. But Egypt is a country of almost perpetual summer, and its climate is dry, while western and north-western Europe are damp and rainy.

If one reflects for a little on some of the more striking points which distinguish one style from another, and endeavors to find a reason for such marked and distinctive features as exist, one is forced to admit that climate has had a very powerful influence in the production of such a variety of architectural expression. True, it has not been the Alpha and the Omega of design, but it has existed from the beginning and will continue to the end, asserting its prerogative and refusing to be left out of consideration in any style of architecture that pretends to be true and national. The size and number and the positions of openings, the aspect of buildings, the sites on which they were erected and the general disposition of their parts, were not matters which were allowed to arrange themselves at hap-hazard, nor were chosen or decided upon carelessly. They were the outcome of the imagination, the result of foresight engendered by long experience, and the thoughtful and vigorous application of keen intellectual acumen, regulated to a very large extent by a wholesome utilitarianism and a recognition of surrounding natural exigencies. But if we continue our reflections a little further, and call to mind the general features of the buildings which have been erected in recent years, and in Canada in particular, we cannot fail to be struck with the want of consideration that has been shown to Dame Climate. We certainly have not a Canadian style of architecture, though considering our age as a nation this is a pardonable offence, if offence it be. But we have not even given a Canadian expression to any style that we have followed. Norman Shaw, in England, revived Queen Anne, but he clothed his work with such freshness and originality of treatment, that one can scarcely recognize in his buildings that they are only a revival of a defunct style. And so with Richardson, of Boston. He revived and modernized the style of Normandy and the north of France, but he treated it in such a manner, and made it so suitable to the local surroundings he had to deal with, that his work only bears a family likeness to its original. So also with Thomson, of Glasgow, who designed in as pure Greek as if he lived in the days of Phidias, but who had mental vigor enough to make the style of his adoption his servant, and to look as much at home among the rugged hills of cloudy Scotland as in the plains of sunny Greece; and these men, being men of genius, have each had their crowd of imitators who have, in their turn shown us how much and how little they have imbibed the spirit which animated their great masters. Norman Shaw revived in England a style that had been practised there more than two hundred years ago, and had been found suitable to the country. Richardson revived, in the northern states of America, a style which existed nearly a thousand years ago in a country subject to climatic conditions similar to his own, while Thomson's revival was only in the spirit of pure Greek architecture, the local and climatic conditions of Scotland being entirely dissimilar from those of Greece. In each case, however, the revivals were successful, and depended for their success not only on the great artistic ability and natural genius of these men, but on the manner in which they grasped and gave expression to local surroundings and modern requirements. And it is in this latter quality that the greatest distinction between Shaw, Richardson and Thomson, and their host of disciples lies.

It has already been said that there is such a thing as fashion in art; and it may be safely affirmed that the three most fashionable styles of architecture at the present time are Queen Anne, Norman and Neo-Greek, and Norman Shaw, Richardson and Thomson are respectively the prophets of these schools. Some might be disposed to call them the modern leaders of fashion in architecture, but this would be derogatory to their great names, for they are in no way responsible for the "run" which their distinctive revivals have had. On the contrary, being men who could appreciate true art in any style, they would have preferred to see men of great ability striking out in new paths of their own finding, where they would have had more freedom and probably have discovered and set before the world new beauties, rather than follow in their wake (sometimes too