

A STUDY OF CONFLAGRATIONS.

The British Fire Prevention Committee have recently published, as No. 15 of their publications, a paper by Mr. Charles E. Goad, whose maps are so well known in insurance offices, read at a meeting of the Insurance Institute, of Manchester. The paper, which is entitled, "Conflagrations During the Last Ten Years," gives an account of the more important fires in English speaking countries during the last ten years, with plans to show the site of the fire and the progress of the flames. The burning of the University of Toronto in 1890, and the three great Toronto fires, which occurred so close together in 1895, receive due notice. The paper was not written for architects, and deals chiefly with the accidents or carelessness and the untoward natural circumstances which were the moving causes in the disasters. But architects may read it with profit, for as it is buildings that are destroyed, there is always a question of building involved somewhere in the story. There is implied in some of the narratives a clear case against wooden buildings, even when detached. We cannot but regret the impossibility of accepting the wooden house which presents such an enviable appearance in American towns; they cost less than brick, have more possibilities of elegance, and, as built now-a-days, are really warmer than brick. But when a fire gets started on any great scale, which is usually when there happens to be a strong wind blowing, the size of the burning fragments that are driven upwards from the blaze, and the distances they will travel, are such that, where wooden houses are common, there is every chance of the fire being enabled to start work in so many places as to divide up the firemen until they have an effective force nowhere. This is what happened when Windsor, Nova Scotia, was burnt in 1897; embers were carried from the place where the fire started to a point 900 yards away "setting fire to isolated buildings all over the town;" and the firemen, finding that the fire was unmanageable, left it and went to look after their own families. The wooden wharf building, which we accept as a necessity, was the origin of the fire that destroyed New Westminster, B.C., and might easily produce trouble in a place like Toronto, where there is a jumble of wooden warehouses along the water front. A southerly wind, upon which in Toronto would depend the communication of fire from the water front to the city, was sufficient for the work in New Westminster. The origin of the conflagration in this place was a startling illustration of how unclassified chances intrude at fires. Three steamers and a coal barge were lying along the wharves at short distances from one another. The time was midnight, or, as Mr. Goad says, 23.30 o'clock. The steamer furthest up stream was moored to the wharf where was the wooden warehouse full of hay, in which the fire started. She soon caught fire, and her moorings being burnt also, started down stream. She immediately collided with the next steamer and set her on fire. These two then drifted down together, picking up as they went the third steamer, and the coal barge. The four blazing vessels all went down stream, keeping close to the wharves, and, with the precision of a plan of attack, set alight one after another the wooden sheds, wharves and canneries for a distance of 500 yards before they swung out into the stream. The flames thus started simultaneously along the ends of seven streets, rushed up the hill with the wind behind, spreading as they went, until arrested by vacant ground

at the sides and a 150 foot avenue at the end. It seems apparent that towns on a slope give a slight additional opportunity to a conflagration. That the flames can manage to make their way without this assistance is evident in the history of Chicago, which excels both in its flatness and its conflagration. Great fires in this country seem to have been much influenced by the question of water. Where there were no engines the pressure was reduced below efficiency by opening too many hydrants at once; or hydrants have been found to be frozen; or, worst case of all, at St. John's, Newfoundland, the water pipes were being cleaned, and (with forest fires inland) were empty, and, as the official report says, "it would take at least three hours running of the water from the mains for the pressure to have been sufficient in the quarter where the fire started."

These facts, though interesting, are not exactly within the province of the architect. When we pass over to England, one or two types of contributory causes in the case of the great conflagrations are such as we may note for the purpose of avoiding them. The narrow streets were, of course, easily leaped over by the flames, but worse than this was the facility offered to the fire and the hindrance caused to the firemen by the solid building of the inner part of the blocks. It is one of the interests of London, to a Canadian, to see how these interior spaces are used up. London, in the business part is, at least, one storey high from street to street. There have to be light areas at certain distances from the outsides of the block, but they go no further down than is necessary, and at the bottom the ground floor continues through under a skylight. The want of outside entrance to these courts, the smallness of their area, and the way in which the bottom was enclosed with glass seems to have embarrassed the firemen so, that, as Mr. Goad says, "when fire reached one of these light courts it had free play to attack from 5 to 20 buildings in the rear without any hindrance whatever." It is not apparent why the 5 to 20 buildings should not each afford a footing for men with a hose to fight back the fire's advance. (As there were 51 steam fire engines at the fire and 294 men, there could have been no lack of hose.) It would take longer to get to a position on the roofs behind than to run the hose in along the ground up a back alley; but the London captain, who is accustomed to solid building, should, one would think, lose no time in pining for a back alley, but proceed at once to the next street and advance over roofs to take the fire in the rear. However, if the fire can be reached in this way, it is not so easily reached as from the ground, and we may well hesitate about fitting up, without due regard for either fireproofing or a firemen's approach, the extensive spaces which are now so wastefully left in the centre of business blocks in this country.

There is a precaution against the spread of fire inwards which we may extract from a comment made on several occasions in this paper—that the wind was blowing in the direction in which the fire walls ran. In the Cripplegate fire there was a remarkable radiation of fire walls from the block in which the fire began. Elsewhere Mr. Goad speaks of the extension of the fire over "a good wall" as "a noticeable feature" of a fire, and accounts for it by the shape of the roof and the presence of skylights. In other words, the fire wall is always spoken of with respect. This confidence in the fire wall suggests a more complete system of such walls. Why should there not be, in the business quarter, fire walls