

other volunteers kept the reservoir supplied with water, drawn from a river at some distance by a string of men who passed buckets from hand to hand from the water-side to the engine amid a tumult of excitement. The old fire companies owned engines of this class, which relied wholly on volunteers for their working. Not infrequently they were found useless from long neglect. In 1841 when a fire broke out at R., in Yorkshire, no one knew where the Sun fire engine was kept as the agent was absent!

Mr. Sims attributes "the application of steam power to work a force pump arranging the engine, boiler, pumps, etc., on wheels, to Mr. John Braithwaite, of London." The distinction, however, of applying steam to operate a pump belongs to Newcomen, the celebrated mechanic. Braithwaite's engine was not appreciated, it was ahead of the time, and, as Mr. Sims' remarks: "There being no demand he ceased building them and it must be inferred that the want of steam fire engines had not been felt." That want was slowly realized in the United States, where, in 1840, the first American steam fire engine was built of which Mr. Sims gives a drawing, also of one built in Cincinnati in 1853, and of the one now in general use.

The treatise narrates the development of fire alarm signals. Respecting these the author thinks some system is needed for more promptly notifying the fire station of a fire having broken out. He says:

"The majority of fires break out at night on holidays when the chances of detection are slightest, and it is upon the intelligent action of some passer-by that the brigade is put in motion. When the fire bursts through the roof or out of the windows, and the knowledge of its existence is thus forced upon somebody the mischief has been largely done and the loss by fire and water is greater than need have been."

Here is an opening for an inventor to make a fortune. Mr. Sims considers that, "there are forces at work increasing the danger of fires, equal to, or slightly in excess of the appliances to control them." A valuable section of this treatise is devoted to a consideration of the causes of these unfavourable conditions and the measures necessary for reversing them by fire protection becoming more and more victorious over fire dangers. To the views of Mr. Sims on this question we propose to refer in a future issue. That there is something radically wrong on this side the Atlantic is manifest from the following returns, which the author gives "from reliable resources," as to the average loss by fire in different countries:—

In France	about \$6 to each	\$10,000	property value
In Germany	" \$10 "	\$10,000	" "
In G. Britain	" \$14 "	\$10,000	" "
In the U. S.	" \$60 "	\$10,000	" "
In Canada	" \$60 "	\$10,000	" "

If Mr. Sims will excuse us we will offer him two suggestions. We advise him to re-enter the field of research for the purpose of gathering materials for a history of the systems of artificial water supply in use from the earliest to modern times, as "fire protection" and "water supply" are almost synonymous terms. The subject is full of interest and capacity for practical application. The ancient Greeks had water works by which the fountains rising in the neighbouring mountains were led through rocks, or enclosed by walls into reservoirs and distributed over the town by a system of channels. By this means Athens, and other places in ancient times, were supplied directly with water. Remains of cisterns and aqueducts are numerous in Greece. The Romans adopted this system but their works were more scientific. The Greeks followed the natural conditions of the soil, whereas the Romans, as in their roads, made a bee-line from the source of supply to point of delivery. In the Island of Kos, and in Italy, reservoirs, water channels and filtering basins are now in use as water-works that were constructed before the Christian era. Remains exist of lead pipes used by the Romans for conducting water to buildings. The water organs of Néro (organo hydraulica novi et ignoti generis), show a knowledge of hydraulics that remind us of the machine now used for blowing church organs. To-day Italy is ahead of the world in its arrangements for supplying water, a full description of which would take the conceit out of modern cities and set them an invaluable example.

Another suggestion is, that the author prepare an edition of his treatise bound in a form adopted for public libraries, every one of which ought to have a copy. We very cordially commend this able treatise to the attention of the public at large, more especially to all who have official associations with fire insurance; we also congratulate the Insurance Institute, Toronto, on having been the medium of this work being published.

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**CANADIAN FIRE UNDERWRITERS' ASSOCIATION.**

The 20th Annual Meeting of the Canadian Fire Underwriters' Association was held last week at Niagara-on-the-Lake. The meeting was presided over by Mr. James McGregor, manager for Canada of the Commercial Union Insurance Company who was complimented upon the ability and geniality with which he had filled the office of president in the past year. A graceful compliment was paid to Mr. G. F. C. Smith, resident secretary of the Liverpool & London & Globe, who is retiring from active service in the insurance field, by electing him president for the coming year, so that he may retire with all the honours of that office thick upon him. Mr. Smith was the first president of the Canadian