

## TWO INTERESTING ANIMALS AT THE NEW YORK ZOOLOGICAL PARK.

The popular name snow leopard seems almost to involve a contradiction of terms, for leopards, as well as lions and tigers, have always been associated in the minds of most of us with the torrid zone. The popular idea, however, that the larger species of wild animals belonging to the cat kind are confined to the tropics is an essentially mistaken one. Our own big cat, the puma, for example, is at home at least as far north as British Columbia, and extending through every variety of climate, lives as far south as the frigid extremity of Patagonia, thus possessing perhaps the most extensive longitudinal range of any living mammal.

Even the tiger, of which, together with the last-mentioned animal, there are now remarkably fine specimens at the zoological parks, is not supposed to have been originally a tropical animal. Its fossil remains are associated with those of the mammoth in the New Siberian Islands, which are situated well toward the pole within the Arctic circle, and living specimens are yet found as far north as Lake Baikal in Siberia.

But the member of the Felidæ apparently best fitted by nature to withstand a cold climate is without doubt *Felis onca*, the long-tailed or snow leopard. This animal never descends beyond the snow line of the mountains it inhabits. It is associated in the high lands of central Asia with the Siberian ibex, the big-horned argali, and Marco Polo's sheep, animals more or less akin to our Rocky Mountain goat and sheep.

The specimen at the park, a fine male in splendid health and condition, although not yet fully grown, is at least as large as any ordinary leopard, and on account of the long and thick coat of fur with which it is covered, it looks much heavier. Indeed, in this respect it seems to suggest a similar variation from the ordinary type to that exhibited by the long-haired breed of domestic cats when compared with our common fireside pussies.

The color of the snow leopard is a gray inclining to buff. A few large, dark spots show about the lower parts, and a number of smaller ones congregate about the head and the neck. The back and the sides are marked with faded-looking brown rings or rosettes. The comparatively enormous tail of the animal is fully as long as his body. "Chang" is the first of his species ever seen in this country. He is the sole survivor of four of the species collected by Mr. Hagenbeck's agents in the northern border of Thibet, and is one of the only three snow leopards now in captivity, of which Berlin has one and London another.

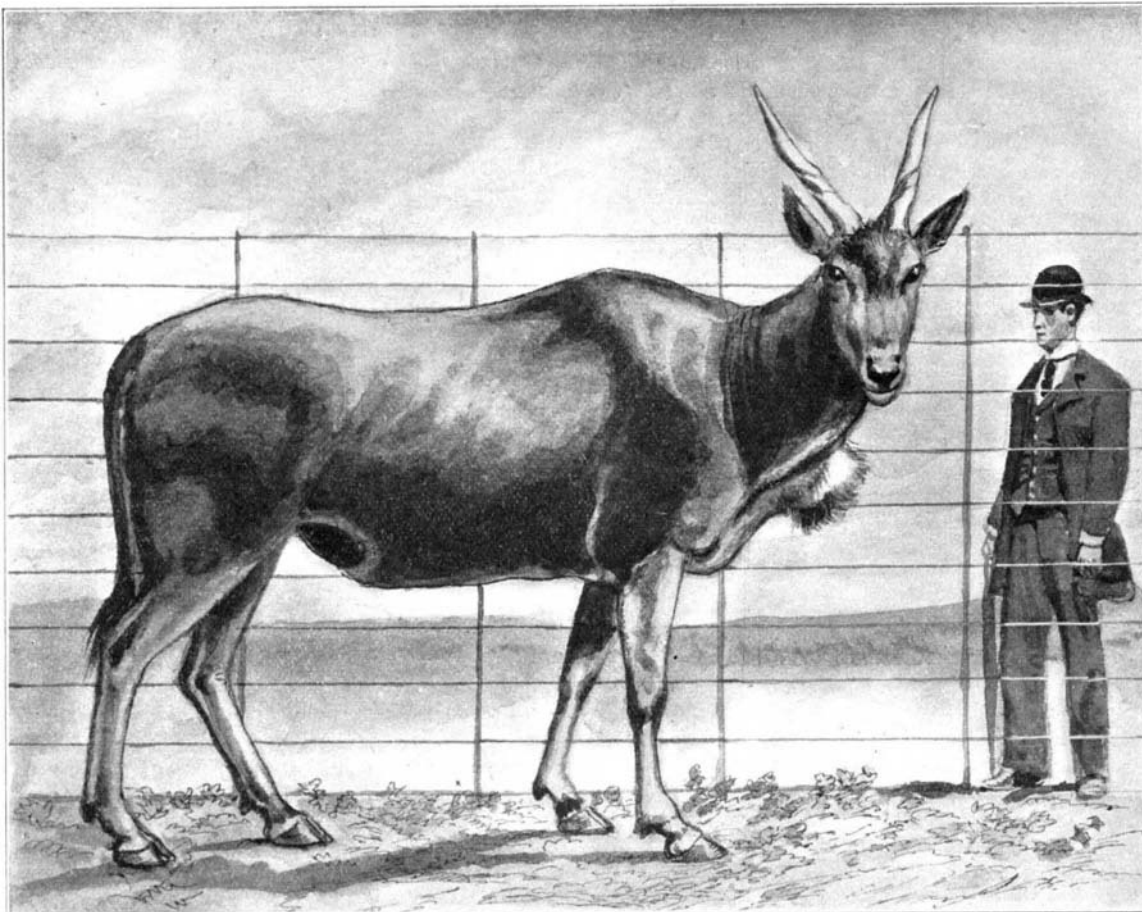
Mr. Hornaday, director of the New York Zoological Park, says that sometimes as many as two thousand tanned skins of the snow leopard are brought from the interior of China to Shanghai in a single year, but that "not one live specimen accompanies them. The distance," he says, "is too great, and the difficulties to be encountered with a live animal in a cage are too numerous to tempt even a Chinaman to try to surmount them. Naturally, these animals are very costly; the price of our specimen was nine hundred dollars."

Another late addition to the attractions of the park is a fine large eland (*Oreus canna*), the giant species of antelope that equals an ox in size, reaching the

height of nearly or quite six feet at the withers. For all its ponderous proportions, the eland is not an ungraceful-looking creature. The expression is mild, and the head is decidedly of the antelope type. It seems as though such an animal might be domesticated here, as it has been in numerous instances in England. The flesh, when the eland is properly fed, is superior to beef in delicacy and flavor; and certainly an animal that without special breeding puts on a weight of from eight hundred to one thousand five hundred pounds and more, is worth experimenting with. One peculiarity of this magnificent animal should recommend it for the great plains of the Southwest, and that is its capacity of going for a long time without water. The ease with which it is reared, its mild disposition, the fact that it breeds freely in captivity, the great value of its hide as well as of its



Long-Tailed Snow Leopard, an Animal that Lives Only Amid Snow and Ice.



The Giant Antelope.

## INTERESTING ANIMALS AT THE NEW YORK ZOOLOGICAL PARK.

flesh, and the rapid improvement it shows under scientific cultivation, all conspire to increase the regret with which we see it rapidly approaching extermination in its native country. Few indeed of the wild members of the order of hoofed mammals exhibit so many claims for domestication and preservation by the human race. Particularly is this the case in a country like our own, which includes regions reproducing in so many particulars the character of the particular parts of the African continent included in the range of these giant antelopes.

The Russian Board of Mercantile Shipping and Harbors is working out a project to connect the White Sea, near Soroka, with Lake Onega, near Powyenetz, by means of a canal, which would be 135 miles in length, and which would cost £1,320,000.

## THE LESSON OF THE BALTIMORE FIRE.

BY DAY ALLEN WILLEY.

Enough time has elapsed since the conflagration occurred in Baltimore for architects, builders, insurance investigators, and other experts to form an intelligent opinion as to the actual destruction caused, and to draw some conclusion as to the effect of heat and flames on various materials. It is admitted that no fire has ever occurred in the history of the world where a greater variety of buildings were damaged or destroyed; for, as is well known, they ranged in character from small antiquated structures of brick and masonry, two and three stories high, to the modern office building. Especially interesting, however, was the effect of the fire upon bank buildings recently constructed. Within the last few years, more of these edifices have probably been built in Baltimore than

elsewhere in the country—buildings designed exclusively for banking purposes, and erected of what was supposed to be the most durable material and provided with the latest appliances which modern ingenuity has devised for protection against fire. Some of these buildings were literally works of art, but one story in height, their exterior composed of massive walls of granite or marble lined with masonry, the framework being of heavy steel girders, and the roof of metal, save where skylights of thick glass were used. Nearly all the skylights, however, were protected by a metallic grating placed a few inches above them. With the exception of the counters and furniture, carpets, and ornamental hangings, the interiors of these banks were supposed to contain no material which would burn, the majority being finished in ornamental metal or stone work with floors of tile, marble, or concrete. With three exceptions, however, these structures suffered as heavily as the others, the interior being literally wrecked. One of the three—the building of the International Trust Company—was principally damaged inside by the wall of the adjacent building falling through the roof, and not so much by the fire. A building recently built by Alexander Brown & Sons had exterior walls of red brick with marble trimmings, being of colonial architecture. Except for the scorching of the walls it was unhurt, although in a portion of the city where the fire was most destructive. The building of the Safe Deposit and Trust Company, also in the heart of the burned district, escaped with slight damage. It was faced with stone, but the masonry lining of the interior was over two feet in thickness.

An examination of the stone ornamental work of the bank and office buildings showed that apparently polished granite withstood the action of the flames and heat much better than the rough surface, although not only granite but marble and other stone was subjected to such a temperature that it cracked off pillars and other portions of the walls in chips, some of which weighed four or five pounds. In fact, the sidewalks around most of the larger buildings were piled with pieces of marble, granite, and brownstone, in some places to a depth of two or three feet. It was noticeable that but little of the terra cotta crumbled away, and most of the brick which fell came down in the walls, but few pieces of brick being detached separately.

Some peculiar instances of the effect of the heat upon different kinds of stone were noted at the International Trust building, also in the United States bonded ware-



New Banking House, Showing Action of Fire on Sandstone Front.



Merchants' National Bank, Showing Sheet-Iron Shutters Burst Open by the Sudden Combustion of Gases Within the Building.



East Side of Continental Trust Building, Showing How Brick Facing was Stripped off by Fire.



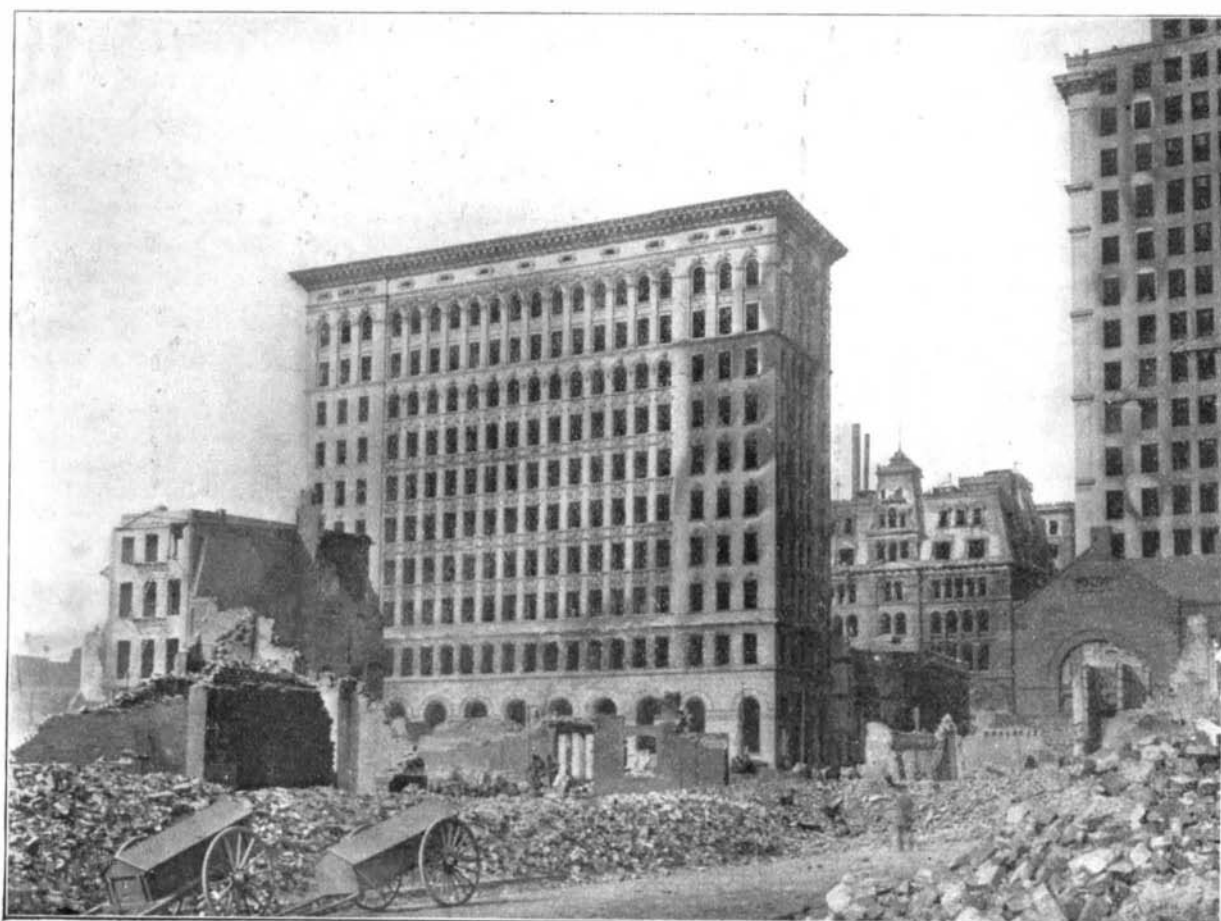
The Fire-Swept Equitable Building With the Unharmed Court House to the Right.



Union Trust Building, Showing the Severe Spalling of the Stone Facing.



The Farmers' National Bank Building. The Three Upper Floors (Non-Fireproofed) Burned Out. The First Story (Fireproofed) was Unharmed, Not Even the Glass of Front Door Being Broken.



Maryland Trust Building Left Standing Among the Ruins of Non-Fireproofed Buildings. The Limestone Facing of Three Lower Stories and Terra Cotta Facing of Upper Stories Showed Good Fire-Resisting Qualities.

LESSONS OF THE BALTIMORE FIRE.

house. A portion of one of the pillars supporting the front wall of the Trust building was reduced to about half its ordinary size, appearing as if it had been shattered with the mallet and chisel of the stone cutter. The government warehouse, which was one of the oldest buildings in the burned district, was practically unhurt, with the exception of a stone column near the entrance in the interior. The effect of the heat upon this was to chip off its surface, so that it is now only about half its former size. The outside walls of this building, composed of ordinary brick, were practically unhurt, with no cracks appearing in any of them. Over a thousand barrels of liquor were stored in the interior, but so thick were the walls that the temperature did not rise sufficiently to ignite the contents of the building.

One of the most interesting features of the disaster was the way in which the new Baltimore court house checked its progress, although it stood directly in its pathway, and was probably exposed to a greater heat than any other structure. It was separated from the Law building, a seven-story structure, by only forty feet of space. When the Law building ignited, the fire was burning over an area of ten city squares southwest of it. Filled with inflammable material, its interior was soon a mass of flames, which were carried by the air current directly against the upper west wall of the court house, and at times extended thirty and forty feet over its roof. In fact, the fire was directly in contact with the wall for fully a half hour. The interior of this part of the court house was flooded with water, while the walls and ceiling were kept wet. On examination it was found that the window casings were charred, and some of the marble coping which surmounted the wall was broken, while the upper part of the wall was chipped and blackened. Not once, however, did the building ignite inside, owing to its massive construction. The exterior is of Maryland marble, which with the inner lining of masonry gives a thickness to the walls ranging from three feet to three feet six inches. The effects noted, as well as others, have led most of the experts who have visited the burned district to

conclude that brick and terra cotta are far better building materials for resisting heat than almost any form of natural stonework; for even the outside walls of the older buildings, as well as division walls, though in many cases completely disintegrated, showed that the brick themselves were but little injured, and the bulk of them can be used for rebuilding if desired. Naturally, the steel framework of the office buildings has been subjected to close study; and although it was feared at first that it was subjected to such intense heat that the strength of the metal would be impaired, and

that it would be dangerous to use it as a support for any great weight, such as walls or floors, architects and erectors of steel-frame buildings in general are of the opinion that it is only necessary to remove the columns and girders which were warped and twisted, and replace them, when the structures will be as substantial as before the fire. Instrumental measurements show that none of the larger buildings are out of the perpendicular line. In all cases, however, it is agreed that the interiors must be entirely renewed. In many instances arched floors have either crumbled away or are so badly broken that they must be rebuilt. Much of the flooring consisted of a form of fireproof concrete laid upon the steel girders, and finished with tiling of marble and terra cotta. In the Union Trust and some other office buildings, most of the flooring fell through to the cellar. In the buildings where it remains, it is so loosely attached that nearly every day since the fire, portions have been falling, sections of three floors giving way unexpectedly in the Equitable building a week after the fire had been extinguished.

The leaders of the Baltimore fire department, as well as insurance men and others familiar with conflagra-

tions, have advanced some interesting theories as to the remarkable rapidity with which the fire spread over the burned area. When it started, the wind was not blowing a gale, as has been stated. In fact, its maximum velocity was not over thirty miles an hour at any time during the day. It is unnecessary to say, however, that as the number of burning buildings increased, and heat was generated in proportion, a draft was caused in the immediate vicinity of the fire, which possibly represented a gale in the force of the air current.

This artificial wind, as it might be termed, of course was blown toward the north and east, since it was aided by the ordinary breeze which came from the southwest. An enormous volume of hot air was driven ahead of the fire as the result of the atmospheric disturbance, and it is believed this had much to do with the spread of the conflagration. In fact, the heat was so great, even where the fire was confined to a single block, that persons on the roofs of buildings 500 and 600 feet away were unable to face it, and were obliged to leave them. When the flames had reached the

instance the efforts made in this way with buckets of water, brooms, and sprinkling hose were successful, and thus far no other cause has been given for the manner in which some of the isolated buildings caught fire, except the action of the hot air penetrating the interiors.

Another proof of this theory is shown in the way buildings protected by "fireproof" shutters were affected. The rear wall of the Merchants' National Bank building was completely protected in this manner, every window being guarded by shutters of sheet metal, which were closed and barred on the day in question. A number of the large warehouses on Hopkins Place were also provided with shutters of the same kind, yet in nearly every instance they were burst open, apparently from some force within, and in a number of cases the opening of the shutters was followed by flames shooting from the windows, although no signs of fire were visible on the other sides of the buildings. An examination of the Merchants' Bank building on the day following the fire showed that every shutter had been forced open as stated.

It is generally acknowledged that only a change in the direction of the wind saved a much larger portion of the city from being destroyed, as the change turned the wave of fire and hot air southward, where it terminated on the harbor front. In the study of its ravages, the question has arisen if destruction of similar or even greater magnitude would not result in other cities, if the conditions were similar to those in Baltimore.

It is admitted that "skyscrapers" had little or no effect in checking the progress of the fire, and when it was once ablaze it could not be approached near enough for the firemen to do any effective work.

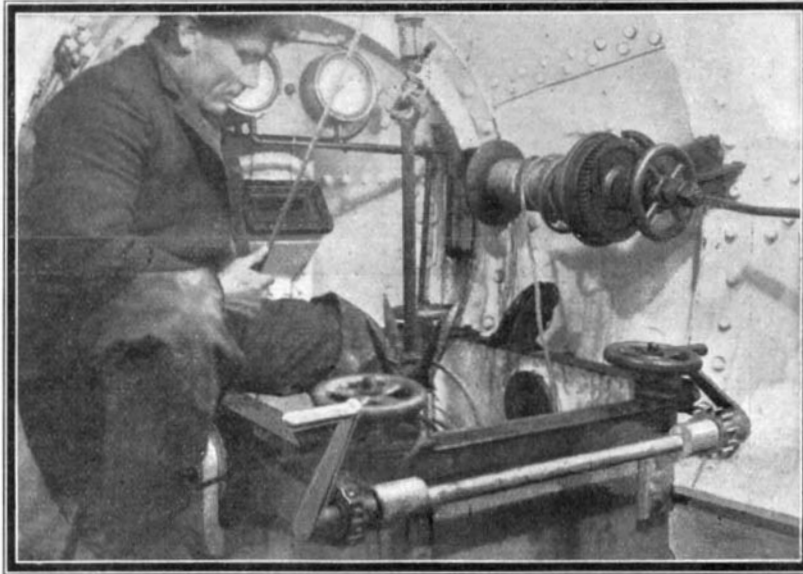
The Baltimore buildings, it is believed, were constructed as solidly and substantially as the average office buildings in New York, Philadelphia, or Chicago. In the latter cities these great structures are more numerous and built more closely together than in Baltimore, and many of the insurance officials especially are of the opinion that a fire in one of the cities named might do even more damage, if it passed beyond the control of the fire department.

#### OFFICIAL TEST OF THE LAKE SUBMARINE BOAT "PROTECTOR."

The test of the submarine boat "Protector," made by an Army Board recently, is fully described on another page. The accompanying illustrations show the appearance of the boat after rising under a huge cake of ice 8 inches or more in thickness; the interior of the diving compartment; and the bow of the boat when in dry dock. The last-named is the most striking picture. In it, the boat's prow has the appearance of a

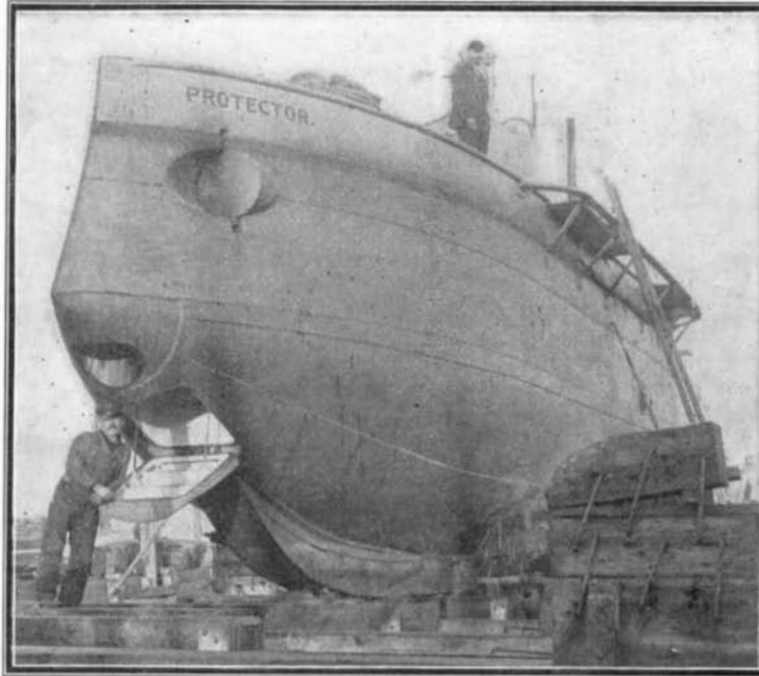
huge, sinister face. The torpedo tubes appear to be the eyes; the bow anchor-weight hole, the nose; and the door of the diving compartment, the mouth of the huge sea monster. The interior view of the diving compartment shows the grapnel bringing up a cable through the door in the floor. The windlass at the side is used to haul up the grapnel after it has picked up a cable. The small rectangular glass in the front of the compartment is for looking at the bottom without opening the compartment door. The tube from this glass leads into the anchor weight hole in the bow, and so this window can only be used when the weight is out of its casing. The diving compartment is the great feature of the Lake submarine that distinguishes it from all others. The picture of the ice-covered boat tells its own story and shows that the new submarine is ice as well as waterproof, and could be used for breaking a channel by running under the ice and coming up under it, if it could be done in no other way.

The first discovery of coal in the United States recorded in history was in 1679, at a locality near the present city of Ottawa, Ill.



Copyright 1904 by R. G. Skerret.

The Diving Compartment, Showing Windlass and Grapnel Bringing up a Cable from the Sea Bottom.



Photos Copyright 1904 by R. G. Skerret.

The "Protector" in Drydock, Showing Diving-Compartment Door Open.



The Ice-Covered "Protector" After a Run.

Army Board members on the deck and conning tower.

financial district, shortly before midnight, and the Continental, Baltimore & Ohio, and the Equitable buildings were on fire at the same time, it was impossible for any one to go within a square of this section, on account of the temperature. Consequently, it was absolutely impossible to attempt to throw a stream of water upon the fire from the north or east of these buildings, and many times during the day the firemen could not even reach the edge of the burning territory for the same reason.

The opinion has been advanced that in many cases the volume of superheated air actually set fire to structures 300 and 400 feet beyond the limit of the flames. The writer and other observers noticed several instances where buildings ignited in this way some time before the main fire reached them, flames and smoke issuing from the interiors, and not from the roofs. It might be said here, that as soon as the extent of the conflagration was realized, forces of men were sent to the roofs of all the buildings throughout the business district for a half mile or more around the burned area, in order to prevent them from being ignited by the quantities of sparks and cinders. In nearly every